PETITION EXHIBIT 1

California Regional Water Quality Control Board

Central Coast Region

Internet Address: http://www.waterboards.ca.gov/centralcoast
895 Aerovista Place, Suite 101, San Luis Obispo, California 93401
Phone (805) 549-3147 • FAX (805) 543-0397

December 17, 2007

Mr. Curt Richards
Olin Corporation
Environmental Remediation Group
P.O. Box 248
Charleston, TN 37310-0248

Certified Mail 7004 1350 0003 9897 8992

Dear Mr. Richards:

SITE CLEANUP PROGRAM: 425 TENNANT AVENUE, MORGAN HILL; CLEANUP AND ABATEMENT ORDER NO. R3-2007-0077

This letter transmits a signed copy of Cleanup and Abatement Order (Cleanup Order) No. R3-2007-0077. The Cleanup Order is hereby issued by the Executive Officer, as authorized by the Central Coast Water Board during the December 7, 2007 Water Board hearing in San Luis Obispo. This Cleanup Order rescinds Cleanup Order No. R3-2005-0014, as amended by Cleanup Order No. R3-2006-0112, but does not remove any requirements of the prior Order.

The Cleanup Order outlines Olin's groundwater cleanup requirements, including the groundwater cleanup approach, strategy and schedule that are necessary to achieve compliance with groundwater cleanup requirements.

During the December 7th Water Board hearing on this Cleanup Order, some of the discussion focused on defining specifics associated with Monitored Attenuation (MA) performance measurement and triggers for activating the contingency plan should MA be deemed ineffective in achieving groundwater cleanup targets, for areas MA is identified as a cleanup strategy. As mentioned by Water Board staff at both the December 7th hearing and at the November 30th Perchlorate Community Advisory Group (PCAG) meeting, the specifics associated with these performance measures and contingency triggers do not currently exist. The performance measures and contingency triggers will be developed as part of the Performance Monitoring Plan (submittal due under E.5.vii of the Cleanup Order) and the Contingency Plan (submittal required by E.5.viii of the Cleanup Order), coupled with evaluation of the Annual Cleanup Progress Status Report (first report due January 31, 2008, required by item H in the Cleanup Order). We estimate that development of these performance elements will require 10 to 18 months based on the submittal dates for the reports mentioned above and subsequent evaluation and comment. We will report to both the Water

EXHIBIT 1

Board and PCAG as the specifics associated with MA performance measurement and triggers for activating the contingency plan are developed and evaluated.

If you have any questions, please contact **Hector Hernandez at: (805) 542-4641** or via e-mail at Hhernandez@waterboards.ca.gov, or Sheila Soderberg at (805) 549-3592.

Sincerely,

FOR Roger W. Briggs
Executive Officer

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ENCLOSURE:
Cleanup and Abatement Order No, R3-2007-0077 issued to Olin Corporation, 425 Tennant Avenue, Morgan Hill

cc via E-mail:

Ms. Frances McChesney
Office of the Chief Counsel
State Water Resources Control Board

Olin Technical Contacts IPL

cc via U.S. Mail:

Mr. Jay McLaughlin
President and CEO
Standard Fusee Corporation
P. O. Box 1047
Easton, MD 21601

Olin Correspondence IPL

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401-7906

CLEANUP AND ABATEMENT ORDER NO. R3-2007-0077

Issued to

Olin Corporation
425 Tennant Avenue, Morgan Hill
Santa Clara County

This Order is issued to Olin Corporation, hereafter referred to as Discharger, based on provisions of California Water Code section 13304, which authorizes the California Regional Water Quality Control Board, Central Coast Region, (hereafter Central Coast Water Board or Water Board) to issue a Cleanup and Abatement Order (Order), and on Water Code section 13267, which authorizes the Water Board to require preparation and submittal of technical and monitoring reports.

The Central Coast Water Board finds:

PROPERTY OWNERSHIP AND OPERATIONS

1. As described herein, and in the administrative record of the Central Coast Water Board, Olin Corporation (Discharger) caused or permitted the discharge of perchlorate to waters of the state from the former Olin manufacturing facility in Morgan Hill (Facility). The Discharger caused or permitted perchlorate-containing waste to be discharged *into* waters of the State causing and continuing to threaten to cause a condition of pollution or nuisance.

2. The Facility consists of a 13-acre parcel and is located at 425 Tennant Avenue, Morgan Hill, Santa Clara County, as shown on **Figure 1**. The Facility is approximately 30 miles southeast of San Jose and 0.5 miles west of Highway 101 in the City of Morgan Hill. The property (Assessor Parcel Number 817-029-028) is zoned light industrial and is surrounded primarily by commercial property. The Facility property is vacant, and all permanent building structures have been removed. Rural residential, agricultural, and urban land uses exist beyond and downgradient of the Facility. The geographic coordinates are 121°, 38', 9" W, 37°, 7', 0 " N.

3. The Discharger has owned the property from at least 1956 to present. The Discharger manufactured signal flares at the Facility for approximately 32 years from 1956 to 1988. Standard Fusee Corporation leased the Facility and manufactured signal flares for approximately seven years, from 1988 to 1995. Potassium perchlorate was used by the Discharger and Standard Fusee Corporation to

manufacture flares from 1956 to 1995. The Discharger and Standard Fusee Corporation stored and used potassium perchlorate, strontium nitrate, chlorate, and other chemicals at the Facility as ingredients of highway safety flares. Perchlorate was first detected at the Facility in August 2000, during a due diligence investigation by a potential buyer. The Discharger informed the California Office of Emergency Services and the Santa Clara County Environmental Health Department on August 29, 2000, about the perchlorate release, as required by applicable state and local release reporting laws. The Discharger and the Central Coast Water Board staff made initial contact regarding the perchlorate discharges in February 2001. Perchlorate discharges are suspected to have originated from the Discharger's use of an unlined evaporation pond to dispose of wastes from the cleaning of the ignition material mixing bowls, onsite burning of cardboard flare coatings, and accidental spills. Discharges of perchlorate likely occurred when water (onsite uses and rain) came into contact with solid salts of perchlorate in the soil. The Central Coast Water Board never formally regulated waste disposal practices while the Facility operated. This Order does not name Standard Fusee Corporation as a discharger because information available to the Central Coast Water Board indicates that Standard Fusee Corporation did not release or discharge perchlorate where it could impact the quality of waters of the state during its tenure as a lessee of the property. No interested party has offered any evidence to the contrary in this proceeding. If new information becomes available, the Central Coast Water Board or Executive Officer may revise this Order to name additional parties as a Discharger at any time.

4. The Discharger has been the sole property owner from at least 1956 to the present. During its occupancy of the Facility, the Discharger conducted activities that caused waste to be discharged or deposited waste where it was discharged into waters of the state and where it has created and threatens to create a condition of pollution or nuisance. At all times that the Discharger owned the Facility, the Discharger had knowledge of the activities that resulted in the discharge of perchlorate and the legal ability to control or prevent the discharge from the property.

5. Discharger's investigation reports, listed in Finding No. 27 below, describe the presence of perchlorate used by the Discharger in onsite soil and underlying groundwater. Characterization efforts indicate the unexplained presence of perchlorate in groundwater up to four miles northeast (upgradient) from the Facility.

6. This Order requires implementation and completion of all necessary investigation and remedial actions (hydraulic control and clean up) associated with the perchlorate plumes emanating from the Facility. This Order requires additional assessment activities and includes an updated schedule to ensure timely and effective completion of the necessary investigation and remedial actions.

7. This Order applies to the entire Facility and to all areas beyond the property boundary, in all directions, that have been impacted by perchlorate that originated from the Facility. Perchlorate from the Facility is present in underlying soil and groundwater and groundwater outside the Facility property boundaries.

BACKGROUND

8. **Orders:** The Central Coast Water Board has provided regulatory oversight of soil and groundwater investigations and cleanup at the Facility since February 2001. The Facility has been regulated previously by Central Coast Water Board orders including cleanup and abatement orders, three waivers of waste discharge requirements, and onsite and offsite investigations pursuant to Water Code Section 13267 Orders (13267 Orders). These 13267 Orders require investigation of onsite and offsite impacts to soil and groundwater, and impose monitoring and reporting programs. Monitoring and Reporting Program (MRP) No. R3-2001-161 (revised) and MRP No. R3-2003-0168 were issued to the Discharger and Standard Fusee Corporation using Water Code Section 13267 authority. The current status of the various orders issued is described below.

   a. **Replacement Water** - On July 7, 2004, the Central Coast Water Board issued Cleanup and Abatement Order No. R3-2004-0101 (Order No. 0101) to require the Discharger and Standard Fusee to provide replacement water to affected well owners. Presently, the Discharger alone provides replacement water to well users whose wells have perchlorate concentrations greater than 6.0 micrograms per liter (µg/L), in accordance with Order No. 0101, as revised by the State Water Resources Control Board (State Board) Order WQ 2005-0007, adopted on May 19, 2005, and Central Coast Water Board staff's letter dated October 6, 2006. The October 2006 letter clarifies replacement water requirements and post bottled water termination monitoring. As of the adoption date of State Board Order No. 2005-0007, the Discharger has replaced the City of Morgan Hill's Tennant Avenue municipal water supply well by paying for the San Pedro Well and by fitting 12 domestic supply wells and three San Martin municipal supply wells with ion exchange (IX) systems.

      Based on the Third Quarter 2007 Groundwater Monitoring Report, 37 domestic supply wells currently exceed the maximum contaminant level (MCL) compared to 68 wells one year ago. Olin operates IX systems on 15 wells, including three municipal wells that serve the west San Martin area. Olin began IX system installation at wells exceeding 10 µg/L, then at wells with concentrations between 8.0-9.9 µg/L. Currently, all domestic supply wells with perchlorate concentrations greater than 7.9 µg/L have IX systems on them. There are two domestic wells with concentrations of perchlorate greater than 7.9 µg/L that do not have IX systems. Olin has not equipped these wells with IX systems because one of these wells is located on a vacant property and the other well is not being used as a potable source. Olin is required to continue providing an alternative water supply until compliance with State Board Order No. WQ 2005-0007 is achieved. **Figure 2** shows the locations of the wells equipped with IX systems.

   b. **Onsite Groundwater Treatment** - On December 8, 2003, the Central Coast Water Board issued General Waiver of Waste Discharge Requirements Resolution No. R3-2002-0115 (General Waiver). The General Waiver authorized the Discharger to extract and treat onsite groundwater, and discharge it to the City of Morgan Hill's Butterfield Retention Basin. On November 2, 2005, the

Central Coast Water Board conditionally amended the General Waiver. The General Waiver amendment authorizes the Discharger to extract and treat onsite groundwater, and discharge the treated water via onsite recharge (injection) wells. The Discharger retains authorization to discharge treated groundwater to the City of Morgan Hill's Butterfield Retention Basin during emergencies. The Discharger began operation of the onsite treatment system on February 23, 2004. By April 7, 2004, the Discharger completed the onsite treatment system startup and has operated the onsite hydraulic containment and treatment system continuously since that time. Groundwater is extracted from the shallow and upper-intermediate aquifers via extraction wells located on the southern boundary of the Facility at a rate ranging from 50 to 175 gallons per minute (gpm). Olin filters the extracted groundwater and then a perchlorate-specific ion-exchange process removes the perchlorate. The treated groundwater is re-injected at a rate of 50 to 250 gpm. As of March 3, 2006, treated groundwater is injected into the shallow (A-zone) aquifer using three injection wells located along the northern portion of the Facility.

Even though Olin has not installed offsite extraction wells to date to hydraulically contain the plume core, the successful onsite soil remediation and the operation of the onsite hydraulic containment system has prevented additional perchlorate from discharging into offsite groundwater.

c. **Onsite Soil Remediation** - On July 9, 2004, Central Coast Water Board issued Waiver of Waste Discharge Requirements Resolution No. R3-2004-0119 to regulate Discharger's onsite soil treatment activities. On August 3, 2004, the Executive Officer approved a combination of in-situ and ex-situ anaerobic bioremediation to treat perchlorate in soil. On October 26, 2006, Central Coast Water Board staff completed its review and issued a closure approval letter concerning the Discharger's July 18, 2006 *Soil In Situ Bioremediation System Closure Report, Olin/Standard Fusee Site, 425 Tennant Avenue, Morgan Hill, California* (Closure Report). The Closure Report documents the successful completion of soil remediation activities at the Facility. Performance-monitoring results indicate that the soils were effectively treated and achieved the Central Coast Water Board's remedial goal of 0.05 milligrams per kilogram (mg/kg).

d. **Storm Water** - The Discharger managed storm water runoff pursuant to State Board Order No. 99-08 DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 for Discharge of Storm Water Runoff Associated with Construction Activity. A Notice of Termination was approved by the Central Coast Water Board on October 25, 2005.

e. **Groundwater Characterization and Cleanup** - The Central Coast Water Board issued Cleanup and Abatement Order No. R3-2005-0014 (Cleanup Order No. 0014) on March 10, 2005. Cleanup Order No. 0014 requires Olin Corporation and Standard Fusee Corporation to conduct basin characterization and groundwater monitoring, propose an offsite groundwater cleanup level, and

evaluate offsite short and long-term plume migration and cleanup alternatives. Cleanup Order No. 0014 established timeframes for offsite groundwater monitoring and cleanup, and required submission of technical reports to support those activities. Cleanup Order No. 0014, as amended by Central Coast Water Board Cleanup and Abatement Order No. R3-2006-0112 (issued on December 21, 2006) clarified Olin's and Standard Fusee's responsibility to fully characterize and cleanup groundwater pollution (in all directions) that originates from the Facility.

f. **Northeast Area** - On September 25, 2006, the Central Coast Water Board rescinded a 13267 Order dated December 8, 2004 requiring investigation of northeast flow. The 13267 Order was issued to Olin Corporation and Standard Fusee Corporation for 425 Tennant Avenue, Morgan Hill. The 13267 Order had been subject to a conditional stay (Stay) beginning February 10, 2005. Olin filed a State Board petition of the 13267 Order, which was held in abeyance. On September 26, 2006, the Central Coast Water Board rescinded the 13267 Order without prejudice because the Discharger has satisfactorily complied with all of the conditions of the Stay, other than the perchlorate source and background study, which is being conducted by the Santa Clara Valley Water District (Water District).

   The Discharger's December 6, 2006 Revised Cleanup Feasibility Study (Revised Cleanup FS Report) provided groundwater data that indicate other perchlorate source(s) may exist in groundwater north and northeast of the Facility. Nevertheless, the Central Coast Water Board attributes the perchlorate concentrations detected immediately north and northeast of the Facility to the Olin Facility.

9. This Order rescinds Cleanup Order No. R3-2005-0014 and Cleanup Order No. R3-2006-0112.

10. **Regional Geology and Hydrogeology:** The four- to five-mile wide Llagas Subbasin comprises the southern part of the NNW-trending Santa Clara Valley. The valley floor has an elevation of about 400 feet above mean sea level (MSL) near Morgan Hill, and slopes to an elevation of about 140 feet at the Pajaro River outlet in the southwest corner of the valley. This Subbasin is in part separated from the Hollister Valley to the SSE by the Lomerías Muertas and Flint Hills, and is separated from the northern Santa Clara Valley in the vicinity of the Coyote Narrows and the Coyote Creek drainage divide near Morgan Hill (*DWR 118, 1981*).

11. The southern Santa Clara Valley is naturally drained by Llagas Creek. This creek is initiated within the upper Llagas reentrant in the Santa Cruz Mountains along the west side of the valley. After entering the valley near Morgan Hill, Llagas Creek flows southward down the valley axis. Other major tributaries feeding into the Llagas, all derived from the west, are the Little Llagas and Uvas (Carnadero) Creeks. At the south end of the valley, Llagas Creek joins the Pajaro River, which

flows westward to the Pacific Ocean at Monterey Bay. Thus, with respect to watershed hydrology, the Llagas is an open basin, with overland flow able to exit the valley via the Pajaro River. Unlike drainage from the Santa Cruz Mountains on the west, most of the Diablo Range adjoining the eastern side of the Llagas Subbasin is drained northward to San Francisco Bay via Coyote Creek. Overland flow in the Coyote Creek catchment is naturally focused into a major strike valley that is parallel to, and located about 1.5 miles west of the Diablo range front. This strike valley, presently containing the Anderson and Coyote reservoirs, is developed on the main trace of the Calaveras fault. Prior to damming, Coyote Creek exited the Diablo Range near the present Anderson dam located directly northeast of Morgan Hill, and flowed south toward the Pajaro River.

12. The Facility is located in the Llagas Subbasin of the Gilroy-Hollister Groundwater Basin in South Santa Clara County[1]. The Llagas Subbasin is a northwest to southeast trending alluvial-filled structural depression that is, in part, the southern extension of the north bounding Coyote Valley Groundwater Subbasin. The Llagas Subbasin's northern boundary consists of a groundwater divide that is believed to coincide with the Coyote Creek alluvial fan topographic high as it emerges from the eastern foothills. The Llagas Subbasin is further bounded on the west by the Santa Cruz Mountains/Gavilan Range and on the east by the Diablo Range, and merges to the south with the Gilroy-Hollister Groundwater Subbasin. The Tertiary- to Mesozoic-age bedrock forming these mountain ranges is relatively impermeable and limits the extent of groundwater movement to the east and west and at depth. The regional and local aquifer systems are composed of alluvial deposits over valley basin bedrock and include Pliocene to Holocene age continental deposits of unconsolidated to semi-consolidated gravel, sand, silt, and clay.

13. **Stratigraphy:** Groundwater is found within the Subbasin in coarse-grain aquifer units deposited primarily by fluvial and possibly alluvial processes, including the shallow aquifer (surface to approximately 50 feet bgs), intermediate aquifer (approximately 70 to 180 feet bgs), and deep aquifer (approximately 200 feet bgs to sub-alluvium). The sub-alluvium unit that underlies the fluvial sediments contains more clay and is thus less permeable than the overlying aquifer units. The three main aquifer units are separated by aquitards deposited as either over bank or flood plain deposits and generally consist of silty material containing minor and discontinuous sand channels.

14. The Discharger has substantially improved the understanding of the Llagas Subbasin geology and hydrogeology through characterization from a detailed study[2] of additional geologic data from new monitoring wells and cone penetrometer test (CPT) borings installed during 2006 and 2007. The maximum depth that the

[1] The geologic and hydrogeologic features of the South Santa Clara Valley, which include the Llagas Subbasin, are described in *Evaluation of Ground Water Resources, South San Francisco Bay, Volume IV, South Santa Clara County Area, Department of Water Resources Bulletin 118-1, May 1981 (DWR 118, 1981).*

[2] MACTEC, January 13, 2007 "Llagas Subbasin Characterization – 2006, Santa Clara County Olin/Standard Fusee, Morgan Hill California"

Discharger has drilled boreholes is 567 feet below ground surface (bgs). A review of aquifer and aquitard sediment samples has resulted in the identification of six sedimentary facies:

Facies	Sedimentologic Features	Depositional Environment
A	Clast to matrix supported, red–brown angular pebble gravel	Morgan Hill piedmont
B	Clast support pebble gravel, locally cobbly, sandy muddy	Coyote-Llagas channels
C	Tan, medium to fine sand silt, irregularly laminated	Proximal channel over bank
D	Orange to tan silt, irregularly laminated to extensively rooted	Dry expansive floodplain
E	Olive mud to clay, contains wood and mollusk shells	Pond or swamp on floodplain
F	Tan to medium to very fine sand, cross bedded	Eolian dunes on floodplain

The six sedimentary facies range from debris-flow like colluvium generated from the Santa Cruz Mountains (Facies A) to alluvial deposits (paleochannel structures to distal floodplain sediments) principally associated with southward flow of the ancestral Coyote Creek. Channel deposits (Facies B) represent the main aquifer units, while the floodplain (Facies D and E) represent the main aquitard units in the Subbasin. The mineralogy of the shallow aquifer (Facies B) indicates that a switch in the origin of the sediment (i.e., 'provenance') from the Diablo Ranges to the Santa Cruz Mountains occurred when the ancient south-flowing Coyote Creek changed direction to flow north to San Francisco Bay. The underlying A/B aquitard represents floodplain deposits flanking the then-active channel. The A/B aquitard is laterally extensive across much of the Llagas Subbasin. The intermediate and deep aquifers (Facies B; locally C and F) have a similar sediment composition and represent sediments deposited primarily by the ancestral Coyote Creek, including discontinuous fine-grain units representing floodplain deposits (Facies D and E).

15. **Underlying Site Stratigraphy:** Beneath the Facility, the aquifer system is composed of heterogeneous layers of clay, silt, sand, and gravel, deposited on a bedrock surface more than 440 feet bgs. The Discharger has characterized the Facility's subsurface into shallow, intermediate, and deep aquifer zones based on data collected during well installation activities. Shallow aquifer groundwater is predominately unconfined; however, local areas may be semi-confined by minor layers of silt and clay sediment within the aquifer, especially at greater depths within the shallow aquifer zone. Groundwater below the shallow zone aquifer is confined by fine-grained silts and clays that define the intermediate and deep aquifer zone aquitard units.

16. **Horizontal Groundwater Flow:** Groundwater in the shallow, intermediate, and deep aquifers south of the Facility generally flows to the south or southeast, consistent with regional flow patterns described in previous investigations (*DWR, 1981*) and topographic drainage into the Pajaro River. Olin measures groundwater elevations at multi-level monitoring wells, single-screen piezometers, and supply wells designed for domestic or agricultural use, all of which constitute 'monitoring wells'. Typical depth to first water in the Llagas Subbasin is variable and typically ranges from 15 to 30 feet bgs depending upon the season.

17. Regional groundwater flow is largely controlled by sedimentary facies, resulting in relatively complex lateral and vertical groundwater flow. Variables contributing to the complexities in groundwater flow include natural Subbasin topography, natural and artificial recharge, particularly in the upper aquifers (e.g., shallow and intermediate), while induced gradients due to extensive pumping in the deep aquifer result in local perturbations in groundwater flow. In general, regional groundwater flow is toward the south in all three aquifers, except near large-capacity pumping wells where radial flow dominates flow in the lower intermediate and deep aquifers. A horizontal gradient of approximately 0.03 feet/foot is typically measured; however, the Discharger has measured local variations as high as 0.06 feet/foot. The horizontal gradient in these aquifers near the Facility is less than gradients measured farther to the south.

18. Aquifer tests in the Morgan Hill-San Martin area of the Llagas Subbasin indicate that the permeability of the upper and middle portions of the intermediate aquifer is considerably higher than that of the lower intermediate aquifer or that of the deep aquifer. The upper units in the Morgan Hill-San Martin area have an average hydraulic conductivity of over 100 feet per day (ft/day), whereas the lower units have an average hydraulic conductivity of less than 10 ft/day. The groundwater migration rates, for the shallow and intermediate aquifer groundwater are from 2 ft/day to 3 ft/day and groundwater migration rates in the deep aquifer flows at less than 0.5 foot/day. However, zones of higher hydraulic conductivity likely exist in the deep aquifer.

19. **Vertical Groundwater Flow:** The potential for vertical downward flow is greater beneath the City of Morgan Hill (i.e., within 1.5 miles of the Facility) than areas farther south. A downward gradient results from significant artificial recharge via the Water District percolation ponds in the northern portion of the Llagas Subbasin (northeast and east of the Facility) combined with significant pumping from the lower portion of the intermediate aquifer and the deep aquifers by City of Morgan Hill municipal wells. A slight vertical upward gradient in the southern portion of the Subbasin indicates regional discharge that occurs further south, probably at the Pajaro River.

20. **Groundwater Use:** Residents, agricultural operations, businesses and cities surrounding and downgradient of the Facility rely solely on groundwater for domestic, agricultural, and industrial supply purposes. The known perchlorate plume area extends for approximately ten miles downgradient. Historically,

approximately 800 offsite wells have had perchlorate detections. During the third quarter of 2007, a total of 37 domestic supply wells had concentrations of perchlorate greater than 6.0 µg/L.

21. **On and Offsite Investigations and Remedial Measures:** The Discharger caused or permitted perchlorate-containing wastes to be discharged to the soil at the Facility and to underlying groundwater. Due to the naturally permeable and transmissive nature of underlying and downgradient soils, perchlorate-containing wastes impacted onsite soil and onsite and offsite groundwater.

22. The spatial distribution of perchlorate in the Llagas Subbasin has been mapped using a combination of (1) multi-level monitoring wells and piezometers that have been installed south and northeast of the Facility, (2) over 800 domestic supply wells, and (3) approximately 250 grab groundwater samples from 92 boreholes south and northeast of the Facility. One hundred and thirty-one depth-discrete screened intervals at 21 well locations southeast of the Facility are using continuous multi-channel tubing (CMT) and single-screen polyvinyl chloride (PVC) piezometers for monitoring perchlorate concentrations in the Llagas Subbasin.

23. Since implementation of MRP No. 2001-161 in December 2001, approximately 1,500 offsite supply wells have been sampled at least once. During the third quarter of 2007, 379 domestic wells, 226 depth discrete onsite and offsite monitoring wells, and three City of Gilroy sentry wells were sampled for perchlorate. Olin used the results from its sampling efforts to evaluate the suitability of using private supply wells to monitor perchlorate migration within the Llagas Subbasin. Based on its evaluation, the Discharger concluded that both types of wells – supply wells with known screen-depth intervals and multi-level monitoring wells – are necessary and appropriate to map perchlorate migration in the Llagas Subbasin. The supply wells provide representative estimates of perchlorate concentrations in the San Martin and Gilroy areas and will continue to do so because of the broad geometry of the perchlorate plume within that part of the groundwater-flow system. However, immediately south of the Facility, dedicated multi-level wells provide much more accurate mapping of the migration of perchlorate.

24. Perchlorate concentrations have been measured above the practical quantitation limit (PQL; 4.0 µg/L) up to 9.5 miles south of the Facility. In general, perchlorate is distributed discontinuously throughout the Subbasin. The maximum concentration in the shallow aquifer zone has declined from 550 µg/L to 180 µg/L in MW-1 during the third quarter of 2007 beneath the Facility. As of the third quarter of 2007, Olin has installed 26 dedicated offsite groundwater-monitoring wells south and northeast of the Facility. Based on data collected from two recently installed deep-aquifer zone wells (MW-59 and MW-60), Olin intends to install additional deep aquifer zone wells. Additionally, the Discharger continues to collect perchlorate concentration data from existing domestic supply wells. Based on an evaluation of data collected in 2006, as presented in Olin's Llagas Subbasin Characterization (Characterization Report) submitted on March 29, 2006, offsite private supply wells that are located further from the Facility provide representative samples of perchlorate concentrations.

Consequently, Olin has incorporated several offsite private domestic supply wells to monitor the perchlorate concentrations throughout the Llagas Subbasin. The Central Coast Water Board is in the process of revising the existing groundwater monitoring program and intends to incorporate the newly installed wells and selected private supply wells as part of the revised monitoring and reporting program. This monitoring program revision is intended for completion during second quarter of 2008.

25. Groundwater is monitored beneath the Facility and throughout the Llagas Subbasin, both upgradient (north and northeast) and downgradient (south, southeast, and east) of the Facility. Considering the lateral and vertical extent of the perchlorate groundwater plume emanating from the Facility (9.5 miles long and greater than 500 feet deep), the Discharger evaluated the distribution of perchlorate in groundwater with respect to four geographical areas (Assessment Areas I, II, III, and IV). These assessment areas correlate with current and historical perchlorate concentrations, number of occurrences, and frequency of detections south of the Facility. Additionally, the Discharger divided the perchlorate plume into priority zones (Priority Zones A, B, and C). The Discharger selected specific numerical values to define the priority zones in order to divide the perchlorate plume into more manageable areas. Priority Zone A is referred to as the "plume core" and is defined as the area where groundwater contains perchlorate concentrations above 24.5 micrograms per liter (µg/L). Priority Zone B is defined as the area where groundwater contains perchlorate at concentrations between 24.5 and 11.0 µg/L, and Priority Zone C is defined as the area where groundwater contains perchlorate at concentrations between 11.0 and 6.0 µg/L. The assigned numerical values have no impact on the cleanup goal that the approved remedy is intended to meet, nor is cleanup limited to these defined priority zones. The area of impact includes, but is not limited to, those areas shown in Figures 3, 4, and 5. The distribution of perchlorate within the Llagas Subbasin, as described in MACTEC's Third Quarter 2007 Groundwater Monitoring Report, dated October 30, 2007, is as follows:

a. **Shallow Aquifer:** Perchlorate is present in Assessment Area I above the MCL in a narrow band extending from the southern portion of the Facility to just south of Maple Avenue. Since the submittal of the Characterization Report, additional shallow aquifer monitoring data indicate that perchlorate is not present offsite above 24.5 µg/L. Perchlorate concentrations immediately downgradient of the onsite extraction wells have decreased steadily during the past three years from 10 µg/L to below the PQL (4.0 µg/L). Perchlorate was not detected at or above the MCL in Assessment Areas II-IV.

b. **Intermediate Aquifer:** The perchlorate plume core (>24.5 µg/L) remains limited to Area I. Perchlorate concentrations immediately downgradient of the onsite extraction well (EW-01B) have decreased steadily during the past three years and are less than 10 µg/L. Perchlorate exceeding the MCL is present in Assessment Areas II-IV.

c. **Deep Aquifer:** The perchlorate plume core extends about 10,000 feet south of the Facility, based on analytical results from initial samples collected from two new wells (MW-59 and MW-60). These results indicate that the plume core in this aquifer now extends further south and encompasses recently installed wells MW-60 and MW-59. The Discharger continues characterization activities to determine perchlorate concentrations in the deep aquifer by installing additional wells.

26. **Offsite Cleanup:** The approved offsite cleanup strategy consists of a phased cleanup approach for perchlorate-impacted groundwater within the Llagas Subbasin. Implementation of the phased approach includes hydraulic containment and treatment of groundwater (i.e., pump and treat) in the area of highest concentrations (plume core) in combination with monitored attenuation for those areas with lower perchlorate concentrations. The Discharger is required to evaluate the effectiveness of the phased cleanup approach to determine the need for modifications or implementation of more aggressive measures to achieve compliance with groundwater cleanup requirements. The approved phased cleanup approach, as conditioned and clarified, is outlined in our Central Coast Water Board's response letter concerning the Discharger's June 15, 2007, *Llagas Subbasin Cleanup Work Plan, Olin/Standard Fusee Site, Morgan Hill, California*. The terms of the required cleanup activities are outlined in this Order. As groundwater cleanup proceeds, Olin must reevaluate the feasibility of achieving background concentrations or may reevaluate the feasibility of achieving an alternative groundwater cleanup level.

27. The following reports detail the presence of perchlorate in soil and or groundwater at, and beyond, the Facility:

- Environmental Engineering Consultants' *Perchlorate Investigation* dated December 7, 2000
- Environmental Engineering Consultants' *Perchlorate Investigation* dated March 21, 2001
- Law Engineering and Environmental Services' *Soil and Groundwater Investigation Report for the Olin/Standard Fusee Property* dated May 16, 2002
- MACTEC Engineering Consultants' *Phase 3 Soil and Groundwater Investigation and Remedial Action Conceptual Design Report* dated June 30, 2003
- Geosyntec Consultants' *Soil Remediation Feasibility Study* dated November 21, 2003
- Geosyntec Consultants' *Remedial Action Work Plan & 90% Design Report For Soil Remediation*, April 8, 2004.
- Geosyntec Consultants' *Soil In Situ Bioremediation System Closure Report, Olin/Standard Fusee Site, 425 Tennant Avenue, Morgan Hill, California, dated* July 18, 2006.
- MACTEC *Engineering Consultants' East of Site Characterization, Olin/Standard Fusee Site, Morgan Hill, California*, dated September 29, 2006.

- MACTEC *Engineering Consultants' Llagas Subbasin Cleanup Feasibility Study – Revised, Olin/Standard Fusee Site*, Morgan Hill, California, dated December 6, 2006.
- Geosyntec Consultants' *Area I Plume Migration Control Work Plan, Olin/Standard Fusee Site, Morgan Hill, California*, dated December 6, 2006.
- Geosyntec Consultants' *Area I Plume Migration Control Feasibility Study, Olin/Standard Fusee Site, Morgan Hill, California*, dated December 6, 2006.
- MACTEC Engineering Consultants' *Llagas Subbasin Characterization – 2006, Olin/Standard Fusee Site, Morgan Hill, California*, dated January 31, 2007.
- MACTEC Engineering Consultants' and Geosyntec Consultants' June 15, 2007, *Llagas Subbasin Cleanup Work Plan, Olin/Standard Fusee Site, Morgan Hill, California* (Cleanup Work Plan).
- July 30, 2007 *Recommendations for Final Extraction Well Locations and Designs for Priority Zone A, Olin/Standard Fusee Site, Morgan Hill, California* (Extraction Well Location letter).
- August 16, 2007 *Status Update on Priority Zone A Plume Migration Control Implementation, Olin/Standard Fusee Site, Morgan Hill, California* (Priority Zone A Status Update letter).
- MACTEC Engineering Consultants' *Quarterly Groundwater Monitoring Reports* dated October 31, 2006, January 31, 2007, April 30, 2007, July 30, 2007, and October 30, 2007.

Reports not specifically included above, but that have been submitted to the Central Coast Water Board by the Discharger and others, are located in the Central Coast Water Board file, and our FTP site at: http://www.waterboards.ca.gov/centralcoast/Facilities/Olin%20Perchlorate/Reports/Index.htm.

28. **Health Effects:** The Office of Environmental Health Hazard Assessment (OEHHA) has determined that perchlorate interferes with the natural function of the thyroid gland by inhibiting the uptake of iodide. Because iodide is an essential component of thyroid hormones, perchlorate disrupts how the thyroid functions. Such an effect decreases production of thyroid hormones, which are needed for prenatal and postnatal growth and development, as well as for normal body metabolism. Potassium perchlorate was used until recently to treat hyperthyroidism related to Graves disease, and is still used diagnostically to test thyroid hormone production in some clinical settings.

LEGAL AUTHORITY

29. Section 13304(a) of the California Water Code provides that:

"Any person who has discharged or discharges waste into waters of the state in violation of any waste discharge requirements or other order or prohibition issued by a regional board or the state board, or who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited

where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water services, which may include wellhead treatment, to each affected public water supplier or private well owner. Upon failure of any person to comply with the cleanup or abatement order, the Attorney General, at the request of the regional board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant."

30. Section 13267(b)(1) of the California Water Code provides that:

"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

31. Section 13304(c)(1) of the California Water Code provides that:

". . . the person or persons who discharged the waste, discharges the waste, or threatened to cause or permit the discharge of the waste within the meaning of subdivision (a), are liable to that government agency to the extent of the reasonable costs actually incurred in cleaning up the waste, abating the effects of the waste, supervising cleanup or abatement activities, or taking other remedial actions. . ."

32. The State Water Resources Control Board (hereafter State Water Board) has adopted Resolution No. 92-49, the *Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304*. This Policy sets forth the policies and procedures to be used during an investigation or cleanup of a polluted site and requires that cleanup levels be consistent with State Water Board Resolution 68-16, the *Statement of Policy With Respect to Maintaining High Quality of Waters in California*. Resolution 92-49 and the Basin Plan establish the cleanup levels to be achieved. Resolution 92-49 requires the waste to be

cleaned up to background, or if that is not reasonable, to an alternative level that is the most stringent level that is economically and technologically feasible in accordance with Title 23, California Code of Regulations (CCR) Section 2550.4. Any alternative cleanup level to background must: (1) be consistent with the maximum benefit to the people of the state; (2) not unreasonably affect present and anticipated beneficial use of such water; and (3) not result in water quality less than that prescribed in the Basin Plan and applicable Water Quality Control Plans and Policies of the State Water Board. Resolution 92-49 directs that investigation proceed in a progressive sequence. To the extent practical, it directs the Central Coast Water Board to require and review for adequacy in written work plans for each element and phase, and the written reports that describe the results of each phase, of the investigation and cleanup.

33. **Water Quality Control Plan:** The Water Quality Control Plan, Central Coast Region (Basin Plan) designates beneficial uses of the waters of the State and establishes water quality objectives to protect those areas. The Basin Plan incorporates statewide plans and policies by reference and contains a strategy for protecting beneficial uses of State Waters. This Order implements the water quality objectives and other requirements stated in the Basin Plan. Pursuant to Chapter 2 of the Basin Plan, the present and potential future beneficial uses of groundwater underlying the Facility, and in the area of the perchlorate plume, include:

    a. Domestic and municipal water supply.
    b. Agricultural water supply.
    c. Industrial water supply.

34. **Regulatory Standards:** On October 18, 2007, the California Department of Public Health (CDPH) established an MCL of 6.0 micrograms per liter (µg/L) (or parts per billion) for perchlorate in drinking water. The MCL is the maximum concentration of a chemical that is allowed in public drinking water systems. According to CDPH, the MCL is an enforceable standard and is set as close to the public health goal (PHG) as feasible and is based upon treatment technologies, costs (affordability), and other feasibility factors, such as availability of analytical methods, treatment technology, and costs for achieving various levels of removal.

35. **Groundwater Use:** Groundwater throughout the affected area of the Llagas Subbasin is actively used as a source for domestic, municipal, agricultural and industrial supply waters. Section 13050(*l*) of the California Water Code defines "pollution" as an alteration of the water quality to a degree that unreasonably affects either beneficial uses or facilities that serve these beneficial uses. Section 13050(*l*)(2) provides that "pollution may include contamination." Section 13050(k) defines "contamination" as "an impairment of the quality of the waters of the state by waste to a degree, which creates a hazard to the public health through poisoning or through the spread of disease." Section 13050(*m*) defines "nuisance" as "anything which meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to

interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons. (3) Occurs during, or as a result of, the treatment or disposal of wastes." The discharge of perchlorate has caused groundwater pollution and interferes with the municipal and domestic use of thousands of people that rely on the affected groundwater as their primary source of drinking water supply. The plume constitutes both pollution and nuisance.

36. The Basin Plan contains numerical water quality objectives that apply to surface water and groundwater, including, drinking water maximum contaminant levels (MCLs) promulgated in Title 22, CCR, Division 4, Chapter 15 (hereafter Title 22) that the Basin Plan applies directly to waters designated as MUN. Thus, the MCL recently adopted by CDPH is a numeric water quality objective of the Basin Plan. The Basin Plan includes the following narrative objective: "Wherever the existing quality of water is better than the quality of water established herein as objectives, such existing quality shall be maintained unless otherwise provided by the provisions of the State Board Resolution No. 68-16, 'Statement of Policy with Respect to Maintaining High Quality of Waters in California,' including any revisions thereto." (Basin Plan, Chapter 3, Section II.A.). The Basin Plan also contains the following prohibition: "Waste discharges shall not contain materials in concentrations which are hazardous to human, plant, animal, or aquatic life." (Basin Plan, Chapter 5, Section IV.A.)

37. The perchlorate discharged at the site is a "waste" as defined in California Water Code section 13050(d). The discharge of perchlorate at the Facility exceeds or violates the water quality objectives and the Basin Plan prohibition. As described in Findings Nos. 20, 24 and 25, the perchlorate exceeds the applicable numeric water quality objective in some areas of the site. The discharge of perchlorate at the site violates the narrative water quality objectives and prohibition. The discharge of perchlorate has interfered with the use of hundreds of private domestic wells and has interfered with the use of water supplies for municipal and domestic beneficial uses. Perchlorate, as a pure product, is defined by the Department of Transportation as a hazardous substance, based on its ignitability/explosive hazard.

CLEANUP LEVELS

38. **Basis for Groundwater Cleanup Level:** State Board Resolution No. 68-16 (Anti-Degradation Policy) requires:

    a. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.

b. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

39. The groundwater impacted by the perchlorate plume is "high quality water" for purposes of State Board Resolution No. 68-16. The determination of whether water is a "high quality water" is made on a constituent-by-constituent basis. Although nitrate exceeds the MCL through much of the basin, the perchlorate plumes described in this Order degrade the high quality waters of the state.

40. State Board Resolution No. 92-49 provides that the Water Board shall ensure that the cleanup attain background unless that is not reasonable. If the Central Coast Water Board determines that achieving background is not feasible it may set a less stringent cleanup level. However, the cleanup level must:

a. Be consistent with maximum benefit to the people of the State;
b. Not unreasonably affect present and anticipated beneficial use of such water;
c. Be the most stringent level that is technologically and economically feasible;
d. Be stringent enough that it does not pose a threat to public health or safety; and
e. Not result in water quality less than that prescribed in the "Water Quality Control Plans and Policies adopted by the State and Regional Water Boards." (e.g., attain water quality objectives)

41. **Background Level:** Until the Discharger substantiates its assertion that a measurable background level of perchlorate exists within the entire Llagas Subbasin or discrete areas within the Llagas Subbasin, the Central Coast Water Board will continue to find that the background perchlorate level in groundwater (for the majority of the Llagas Subbasin) is less than the method detection limit (MDL[3]). In accordance with State Board Resolution No. 92-49, the background concentration of perchlorate in groundwater within the Llagas Subbasin must be the level of perchlorate that would exist in groundwater without regard to any discharges from the Facility.[4]

42. **Other Potential Sources:** On February 10, 2005, the Discharger and the Central Coast Water Board stipulated to a stay of a 13267 Order [December 8, 2004] requiring the Discharger to conduct an investigation of area northeast of Facility. Item No. 4 of the Stay states, "*The Santa Clara Valley Water District ("District") has indicated that it is willing to commence a forensics investigation to the northeast of*

[3] The MDL is instrument-specific and is defined as the lowest concentration that a given instrument can record. The MDL for perchlorate using United States Environmental Protection Agency (USEPA) Method 314.0 is typically 1.4 micrograms per liter (µg/L).

[4] In the case of commingled plumes from multiple identifiable dischargers, background is determined without regard to the commingled discharges.

the Site. The primary focus of the District's investigation will be outside of the area in which the area requires the Dischargers to conduct their forensics investigation (the "Forensics Area"). However, the District has indicated that it will also perform some of this investigation within the Forensics Area." The Santa Clara Valley Water District (Water District) is implementing a "Work Plan for the Perchlorate Source and Background Study of the Llagas Groundwater Subbasin" (June 2005) that will utilize forensic chemistry to determine, if and to what extent, suspected natural and anthropogenic sources of perchlorate are contributing to the existing perchlorate groundwater impacts. While the Water District's forensic investigation may not provide definitive results, we trust it will provide additional data that are likely to be relevant to any further proceedings related to the source(s) of perchlorate northeast of the Site. Presently, Water District staff anticipates that preliminary results will be available for review in Spring 2008.

43. The Discharger and the City of Morgan Hill have provided data indicating an unexplained presence of perchlorate concentrations in groundwater extending up to the City of Morgan Hill Boys Ranch Wells and Anderson Reservoir. Based on the groundwater data provided to date, the Olin Facility is the likely source of perchlorate concentrations detected in the deep aquifer zone and immediately north and northeast of the Site. The Discharger has not determined the extent of perchlorate concentrations north and northeast of the Facility. At this time, based on the available data, Water Board staff considers the Discharger's perchlorate to extend to the area bounded by wells MP/PZ–01 through MP/PZ-03. Additional delineation of perchlorate concentrations in the deep aquifer is still required east of PZ-05.

44. The Central Coast Water Board has determined it is not reasonable at this time to establish a cleanup level that is less stringent than background for the Llagas Subbasin. As additional data are collected and evaluated, including data associated with the Water District's forensic chemistry study (for background determination purposes) and ongoing performance monitoring data, and as the Central Coast Water Board thoroughly evaluates the efficacy of the selected remediation strategy, establishing an alternative cleanup level less stringent than background will be reevaluated.

45. This Order requires the Discharger to implement active remediation within the highest concentration areas expeditiously. The Discharger is required to proceed with immediate implementation of groundwater cleanup (hydraulic containment and treatment) with the cleanup objective (goal) of achieving the background concentration[5] within each individual aquifer zone and those portions of the Llagas Subbasin impacted by discharges from the Facility. As groundwater cleanup proceeds, the Discharger may reevaluate the feasibility of achieving cleanup to background concentrations. Should the Discharger submit information that indicates background water quality cannot be reasonably restored, Central Coast Water Board

[5] If the implemented cleanup technology proves unsuccessful in achieving background in a technically and economically feasible manner, the Central Coast Water Board may adjust cleanup goals later.

staff will review that information to ensure consistency with State Board Resolution No. 92-49, Section III.F.1.

46. Concurrence from the Central Coast Water Board or its staff on a proposed cleanup plan does not excuse the Discharger of the obligation to complete the cleanup in compliance with Resolution No. 92-49, even if the Discharger's selected method or strategy is not successful or does not result in full compliance with Resolution No. 92-49. In that event, the Central Coast Water Board may require the Discharger to propose additional or alternative remedies until the Discharger achieves compliance with Resolution No. 92-49.

DISCHARGER LIABILITY

47. As described in the above Findings, the Discharger is subject to an order pursuant to Water Code section 13304 because the Discharger has discharged or deposited waste and caused or permitted waste to be discharged or deposited where it has discharged to waters of the state and has created, and continues to threaten to create, a condition of pollution and/or nuisance. The condition of pollution and/or nuisance is a priority violation and issuance or adoption of a cleanup and abatement order pursuant to Water Code section 13304 is appropriate and consistent with policies of the Central Coast Water Board. If additional parties are determined to be responsible for this discharge of waste, this Order may be amended by the Central Coast Water Board or the Executive Officer, and issued to those parties and the Dischargers.

48. As described in the above Findings, the Discharger is subject to an order pursuant to Water Code section 13267. As described in this Order, existing data and information about the Facility indicates that waste has been discharged or is discharging from the Facility described above. The Facility is owned or operated, or formerly owned or operated by the Discharger named in this Order. This Order requires monitoring, work plans, and reports pursuant to Water Code Section 13267. This finding is made in compliance with Section 13267. The work plans and monitoring required by this Order are necessary to design and implement a cleanup plan for the perchlorate-impacted groundwater and to determine compliance with this Order.

49. The Discharger may not rely on any groundwater modeling unless the Discharger provides the Water Board with a legal copy of the modeling software (if needed, as determined by the Executive Officer), electronic input data files, assumptions used, model calibration information and all other data or information used in the model upon request of the Executive Officer. All such files, assumptions, information and data (other than commercial software programs) shall become a part of the administrative record for this Facility and will be available to the public in any proceeding regarding enforcement or revisions of this Order.

50. **Notification:** The Central Coast Water Board has notified the Discharger and all interested agencies and persons of its intent pursuant to California Water Code Section 13304 to issue this Order. The Central Coast Water Board has made every reasonable attempt to notify these individuals and has provided them with an opportunity to submit their written views and recommendations. The draft Order was sent to interested parties on September 18, 2007. The Central Coast Water Board accepted public comments on the draft Order until December 3, 2007.

51. **California Environmental Quality Act:** This Order updates and clarifies Order No. R3-2005-0014, as amended by Order No. R3-2006-0112, but does not remove any requirements of the prior Order. This Order will not cause any adverse change to the environment as compared to the current baseline, which includes the existing pollution. Therefore, this Order is exempt from the California Environmental Quality Act (Public Resources Code Section 21000, et seq.) under the "common sense exemption" under Section 15061(b)(3), Title 14, CCR, because it is an activity that "is covered by the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA." In addition, this enforcement action is being taken for the protection of the environment and as such is exempt from the provisions of CEQA in accordance with Sections 15307 and 15308, Chapter 3, Title 14, California Code of Regulations (CCR). The issuance of this Order is also an enforcement action taken by a regulatory agency and is exempt from the provisions of CEQA pursuant to Section 15321(a)(2), Title 14, CCR.

52. **Cost Recovery:** Pursuant to Section 13304 of the California Water Code, the Central Coast Water Board is entitled to, and may seek, reimbursement for all reasonable costs actually incurred by the Central Coast Water Board to investigate unauthorized discharges of wastes or to oversee cleanup of such waste, abatement of the effect thereof, or other remedial action pursuant to this Order.

53. **State Board Review:** Any person affected by this Central Coast Water Board action may petition the State Board to review the action in accordance with Section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The State Board, Office of Chief Counsel, must receive the petition within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

IT IS HEREBY ORDERED, pursuant to Sections 13267 and 13304 of the California Water Code that the Discharger, its agents, successors or assigns, shall cleanup and abate the effects of the perchlorate discharged from the Facility, as follows:

A. This Order replaces Cleanup Order No. R3-2005-0014 and Cleanup Order No. R3-2006-0112, which are hereby rescinded.

B. The Discharger shall cleanup perchlorate-impacted groundwater to achieve background concentrations. The background concentration is the level of perchlorate that would exist in groundwater without regard to any discharges from the Facility. If any part of the Facility plume has commingled with other plumes with an identifiable source, the Executive Officer may require the Discharger and the other sources to jointly clean up the commingled plume to background (the level of perchlorate that would exist without regard to any of the subject discharges).

C. The Discharger shall install ion exchange (IX) systems on all domestic water supply wells that are actively used as a potable source and with perchlorate concentrations greater than 7.9 µg/L. The Discharger is required to operate and maintain the IX systems and provide an alternative water supply until compliance with State Board Order No. WQ 2005-0007 is achieved.

D. IMPLEMENTATION OF OFFSITE GROUNDWATER CLEANUP

The Discharger shall proceed with immediate implementation of a phased groundwater cleanup approach within the Llagas Subbasin, as approved, conditioned, and clarified in the Central Coast Water Board's response letter concerning Olin's June 15, 2007, *Llagas Subbasin Cleanup Work Plan, Olin/Standard Fusee Site, Morgan Hill, California* (Cleanup Work Plan), and herein. The approved cleanup strategy consists of a phased cleanup approach for perchlorate-impacted groundwater within the Llagas Subbasin and applies to those portions of the Llagas Subbasin that have been impacted by perchlorate discharges from the Olin Facility. Implementation of the phased approach includes hydraulic containment and treatment of groundwater (i.e., pump and treat) in the area of highest concentrations (plume core) in combination with monitored attenuation for those areas with lower perchlorate concentrations. In addition to hydraulic containment of Priority Zone A in the intermediate aquifer, the Discharger is also required to demonstrate hydraulic containment of Priority Zone B (in the intermediate aquifer only) or submit an alternative Priority Zone B containment plan, at the request of the Executive Officer. The approved cleanup strategy includes the following components:

- **Extraction Wells:** Installation of a sufficient number of dedicated groundwater extraction wells at appropriate locations within Priority Zone A (and Priority Zone B of the intermediate aquifer, if needed) that exists within the intermediate and deep aquifer zones to achieve effective hydraulic control and treatment of perchlorate-impacted groundwater to downgradient areas, and achieve compliance with groundwater cleanup requirements.

- **Monitored Attenuation:** Monitored attenuation is conditionally approved as a remedy component of the approved groundwater cleanup strategy and shall be implemented throughout the areas of the Llagas Subbasin with lower concentrations of perchlorate. Monitored attenuation shall apply to all portions of the Llagas Subbasin outside of the plume core (within the shallow, intermediate and deep aquifer zones), including those portions of the deep aquifer zone

immediately east and northeast of the Facility and those portions of the intermediate aquifer outside of Priority Zones A and B.

Due to the uncertainties concerning the long-term effectiveness and the predicted timeframes estimated for groundwater cleanup, the Discharger shall implement the monitored attenuation remedy component in strict accordance with USEPA's guidance document[6] concerning the use of monitored attenuation at groundwater cleanup sites.

The Discharger shall continuously evaluate and demonstrate that the selected cleanup approach (monitored attenuation in conjunction with hydraulic control and treatment measures) will effectively achieve remediation objectives within a timeframe that is reasonable compared to that offered by other methods. The phased cleanup strategy shall be evaluated by implementing an approved Performance Monitoring Program and a Remedial Contingency Plan. The Performance Monitoring Program is necessary to evaluate whether the monitored attenuation remedy option is performing as expected and is capable of attaining the cleanup level within the anticipated (reasonable) timeframes. The Remedial Contingency Plan is a backup remedy that provides for modification of the approved groundwater remedy, if the monitored attenuation component fails to perform as anticipated.

E. IMPLEMENTATION OF AREA I PLUME MIGRATION CONTROL

The Discharger shall comply with the following Implementation Schedule, including future revisions approved by the Executive Officer by amendment to this Order or by letter.

1. **By December 31, 2007** – The Discharger shall complete installation and hydraulic testing of the Priority Zone A intermediate zone groundwater extraction well.

2. **By** – The Discharger shall complete installation and hydraulic testing of the deep aquifer groundwater extraction well.

3. **By April 15, 2008** – The Discharger shall prepare and submit an Area I Plume Migration Control FS Addendum. The addendum shall include the following information for the intermediate and deep aquifer zones:
   a. Resolution and final selection of the extracted water treatment and disposition option.
   b. The conceptual design for the Assessment Area I containment/cleanup system incorporating extraction rates based on well-yield testing of the extraction wells and any newly available results of ongoing characterization activities.

[6] United States Environmental Protection Agency, OSWER Directive Initiation Request, "Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites," April 21, 1999.

c. An updated schedule for design and implementation of the Assessment Area I containment system. All modifications to the proposed number of extraction wells, locations, and extraction rates must be substantiated with data.
d. Recommendations and proposed schedule for completing all additional deep zone characterization activities that may be deemed necessary, and
e. All other pertinent information concerning the deep zone characterization activities, including a discussion of available data, specific recommendations and proposed schedule for the installation, testing, and proposed locations of any additional extraction wells concerning the intermediate and deep aquifer zones.
f. Specifically address cleanup implementation options (i.e., proceed with current approach of a combined groundwater treatment system for the intermediate and deep aquifer zones versus implementing independent groundwater containment systems for the intermediate and deep aquifer zones).

4. **By April 15, 2008** – The Discharger shall submit an addendum to the current cleanup approach for the intermediate aquifer. The Discharger shall submit an Intermediate Aquifer Zone Cleanup Work Plan that proposes a groundwater containment system (hydraulic control and cleanup) that will provide effective plume migration control and cleanup of Priority Zones A and B within the intermediate aquifer zone. If the existing extraction well in the intermediate aquifer is determined to be insufficient to hydraulically contain Priority Zones A and B, the Discharger shall propose contingency measures to achieve containment as part of this report.

5. **By August 8, 2008, November 28, 2008, and February 13, 2009** – The Discharger shall submit the 45%, 90% and 100% Engineering Design Packages, respectively, for the Area I System. The 100% design package will include final versions of the following design items: (i) design report, (ii) technical specifications, (iii) design drawings, (iv) design calculations, (v) Functional Checkout Plan, (vi) System Start-up Plan, (vii) Performance Monitoring Plan, (viii) Contingency Plan updates (as necessary), and (ix) supporting data (e.g., results of pilot test (if conducted), current water quality data, etc.).

6. **Between April 13 and September 30, 2009 -** The Discharger shall construct the Area I containment system.

7. **Between October 5 and November 30, 2009** – The Discharger shall perform system startup and shakedown (testing & evaluation) on the intermediate and deep aquifer extraction wells.

8. **By January 15, 2010** – The Discharger shall prepare and submit the commissioning and startup report for the Area I containment system. This report will document the activities conducted during commissioning and startup of the

Area I containment system. The report shall also include as-built drawings for the Area I containment system.

F. The Discharger shall implement this Order as directed by the Executive Officer and consistent with the following documents and staff responses:

1. MACTEC Engineering Consultants' *Llagas Subbasin Cleanup Feasibility Study – Revised, Olin/Standard Fusee Site, Morgan Hill, California* (Revised Cleanup FS Report), dated December 6, 2006. Central Coast Water Board letter dated March 29, 2007.
2. Geosyntec Consultants' *Area I Plume Migration Control Work Plan, Olin/Standard Fusee Site, Morgan Hill, California* (Area I Plume Migration Control Work Plan), dated December 6, 2006. Central Coast Water Board letter dated March 29, 2007.
3. Geosyntec Consultants' *Area I Plume Migration Control Feasibility Study, Olin/Standard Fusee Site, Morgan Hill, California* (Area I FS Report), dated December 6, 2006. Central Coast Water Board letter dated March 29, 2007.
4. MACTEC Engineering Consultants' *Llagas Subbasin Characterization – 2006, Olin/Standard Fusee Site, Morgan Hill, California* (2006 Characterization Report), dated January 31, 2007. Central Coast Water Board letter dated May 9, 2007.
5. Geosyntec Consultants' *Area I Extraction Well Installation Work Plan, Morgan Hill, California*, dated April 30, 2007. Central Coast Water Board letter dated June 11, 2007.
6. MACTEC Engineering Consultants' and Geosyntec Consultants' *Llagas Subbasin Cleanup Work Plan, Olin/Standard Fusee Site, Morgan Hill, California* (Cleanup Work Plan), dated June 15, 2007. Central Coast Water Board Letter issued in December 2007.

G. **CHARACTERIZATION REPORT UPDATES - By January 30, 2008, and yearly thereafter:** The Discharger shall submit an update to the 2006 Characterization Report documenting all site characterization activities performed. The required yearly updates may be incorporated into other required technical reports, as approved by the Executive Officer.

H. **ANNUAL CLEANUP PROGRESS STATUS REPORTS**
Beginning on <u>January 31, 2008,</u> the Discharger shall submit annual **remediation progress updates** concerning the effectiveness of the hydraulic containment systems and monitored attenuation (MA) remedy (within each aquifer zone). The yearly updates must summarize the results of all the evaluations performed to date and include:

1. Evaluation and recommendations of the Performance Monitoring Program for containment system and MA remedy.
2. Evaluation and recommendations of extraction system modification and or continued operation.

3. Evaluation and recommendations of treatment system modification and or continued operation.
4. Evaluation of MA remedy – includes a presentation and discussion of statistical evaluation and spatial analysis results, with respect to MA remedy.
5. Determination if remedial contingency plan must be implemented.
6. Findings of additional field investigations.

I. **FIVE-YEAR STATUS REPORT AND EFFECTIVENESS EVALUATION**

Five years from the issuance date of this Order [and each five-years after that], the Discharger must submit a technical report acceptable to the Executive Officer that includes a summary of the results of any additional investigation; an evaluation of the effectiveness of the final cleanup measures installed and cleanup costs for the prior five-year period; additional recommended measures to achieve final cleanup goals, if necessary; and the tasks and time schedule necessary to implement any additional final cleanup measures. This report shall evaluate and document the overall cleanup strategy. If the groundwater cleanup goal in this Order has not been achieved and is not expected to be achieved through continued groundwater extraction, this report shall also evaluate whether it is feasible to achieve the cleanup goal, and if so, a proposal for procedures to do so. This report shall also include cumulative analytical data for the five-year period.

J. **COMPLETION OF GROUNDWATER CLEANUP**

1. Groundwater cleanup will be considered complete when Olin complies with the cleanup level of background concentrations within each individual aquifer zone and those portions of the Llagas Subbasin impacted by discharges from the Olin site, or a less stringent cleanup level consistent with State Water Board Resolution 92-49 and approved by the Executive Officer.

2. **Groundwater Extraction Curtailment:** Prior to curtailing groundwater extraction, the Discharger shall submit a technical report and an implementation schedule acceptable to the Executive Officer containing a proposal for curtailing pumping from groundwater extraction well(s) and the criteria used to justify such curtailment. Curtailment of groundwater extraction may include, but is not limited to: final shutdown of the system, phased approach to shutdown, pulsed pumping, or a significant change in pumping rates. The report shall include the rationale for curtailment or modifying the onsite and offsite systems. This report shall also include data to show that the cleanup goal (background concentration) for perchlorate has been achieved and has stabilized or is stabilizing, and that the potential for perchlorate concentrations rising above the cleanup goal or an approved alternate cleanup goal is minimal. This report shall also include an evaluation of the potential for continued migration (horizontal and vertical) of perchlorate.

3. All system modifications to the containment/cleanup systems are subject to approval by the Executive Officer. This requirement may be waived by the Executive Officer if deemed appropriate.

4. **Completion of Groundwater Well Curtailment:** Within 60-days of curtailing groundwater extraction, the Discharger shall submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task J.2, above.

5. The Discharger shall comply with all time schedules included as part of or referenced by this Order or as directed by the Executive Officer.

K. **EVALUATION OF NEW TECHNICAL INFORMATION**
The Discharger may submit a technical report acceptable to the Executive Officer evaluating new technical and economic information that indicates that cleanup standards or cleanup technologies in some areas may be considered for revision. The technical report shall not be required unless the Executive Officer determines that such new information indicates a reasonable possibility that the Order may need to be changed.

L. **MONITORING AND REPORTING**
The Discharger shall comply with Monitoring and Reporting Program (MRP) Nos. 2001-161 (revised August 6, 2004) and R3-2003-0168, including any existing MRPs or other 13267 orders, any revisions the Executive Officer makes to such MRP(s), and any subsequent technical, monitoring or reporting requirements issued by the Executive Officer related to monitoring and cleanup of the perchlorate plume originating at the Olin Facility.

M. **REVISIONS TO ORDER**
This Order in no way limits the authority of the Central Coast Water Board to institute additional enforcement actions or to require additional investigation or cleanup at the Facility consistent with the California Water Code. This Order may be revised by the Executive Officer or the Central Coast Water Board at any time as additional information becomes available, including without limitation, revisions of this Order to name additional Dischargers.

N. **AMENDMENT OF DUE DATES**
If, for any reason, the Discharger is unable to perform any activity or submit any document in compliance with the schedules in this Order or in compliance with any requirement of this Order, the Discharger may request, in writing, an extension of the time specified. The extension request shall include justification for the delay and shall be received at least 60-days prior to the scheduled deadline, or as soon as a delay is confirmed, which ever comes first. The Executive Officer may grant the request by revision of this Order or by a letter.

O. **OVERSIGHT COSTS**

The Discharger shall be liable, pursuant to California Water Code Section 13304, to the Central Coast Water Board for all reasonable costs incurred by the Central Coast Water Board to investigate unauthorized discharges of waste, or to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, pursuant to this Order. The Discharger shall reimburse the Central Coast Water Board for all reasonable costs associated with investigation or oversight of the cleanup of this facility. Failure to pay any invoice for the Central Coast Water Board's investigation or oversight costs within the time stated in the invoice (or within thirty days after the date of invoice, if the invoice does not set forth a due date) shall be considered a violation of this Order.

All technical and monitoring plans and reports required in conjunction with this Order are required pursuant to Section 13267 of the California Water Code and shall include a statement by the Discharger, or an authorized representative of the Discharger, certifying (under penalty of perjury in conformance with the laws of the State of California) that the workplan and/or report is true, complete, and accurate. Cleanup reports and/or hydrogeological reports and/or investigation reports and/or technical reports and/or plans shall be prepared by, or under the direct supervision of, and signed and stamped by a California Professional Geologist, Certified Engineering Geologist, or Civil Engineer.

FAILURE TO COMPLY WITH THE PROVISIONS OF THIS ORDER MAY SUBJECT THE DISCHARGER TO FURTHER ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO, ASSESSMENT OF CIVIL LIABILITY UNDER SECTIONS 13268 AND 13350 OF THE CALIFORNIA WATER CODE AND REFERRAL TO THE DISTRICT ATTORNEY OR ATTORNEY GENERAL FOR INJUNCTIVE RELIEF AND CIVIL OR CRIMINAL LIABILITY.

Roger W. Briggs
Executive Officer

12-14-07
Date

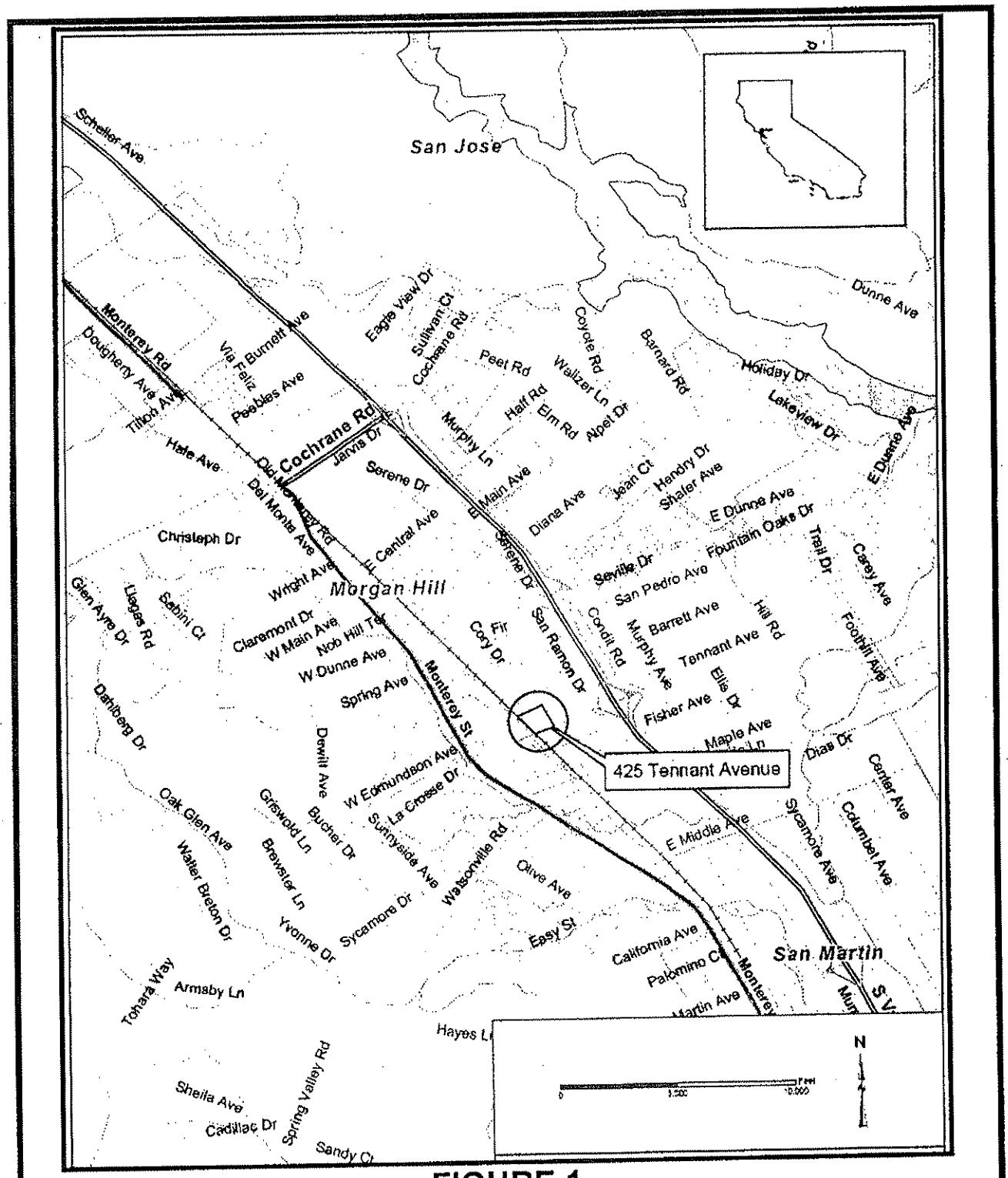


FIGURE 1
FACILITY LOCATION MAP
Olin Corporation

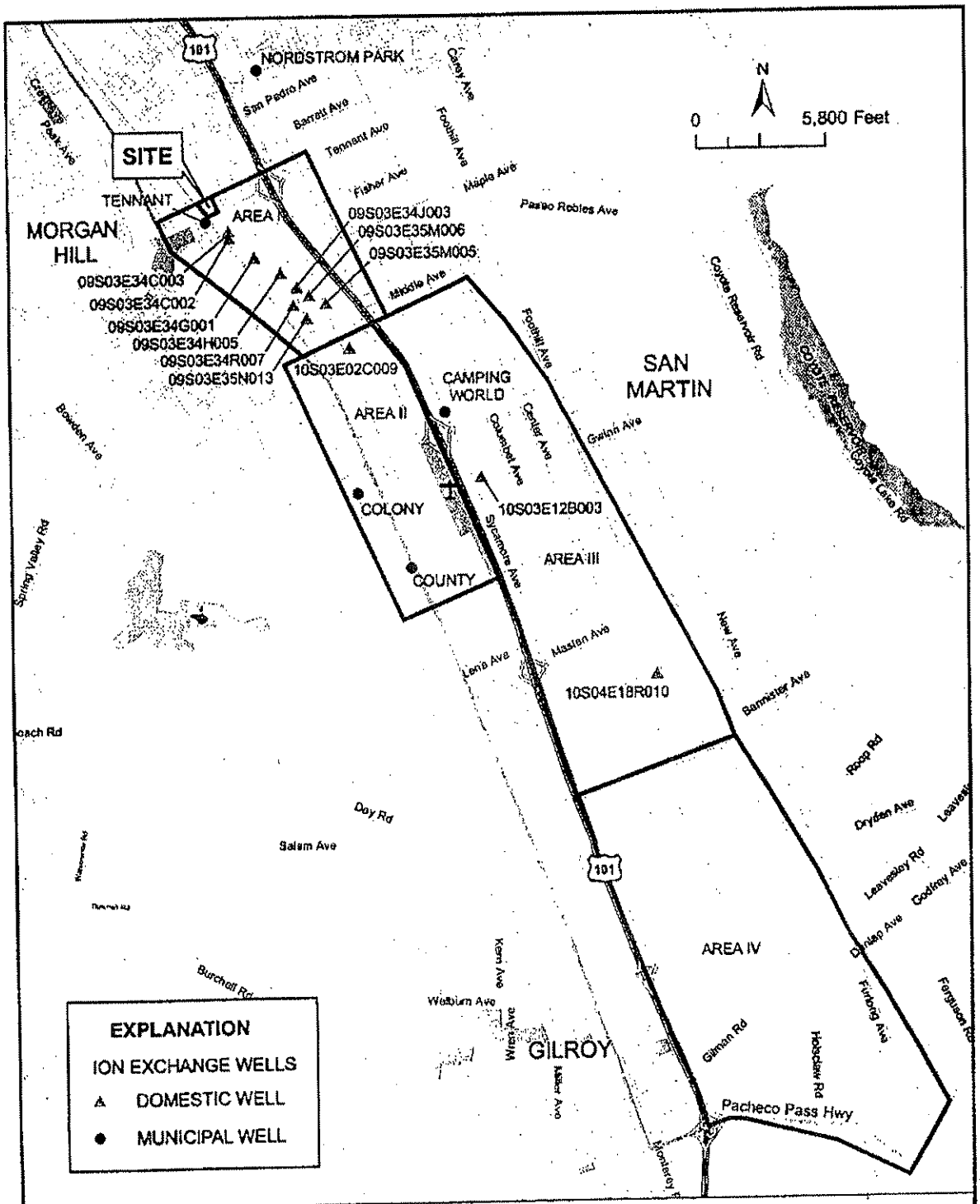


FIGURE 2
ION EXCHANGE WELL LOCATIONS
Olin Corporation

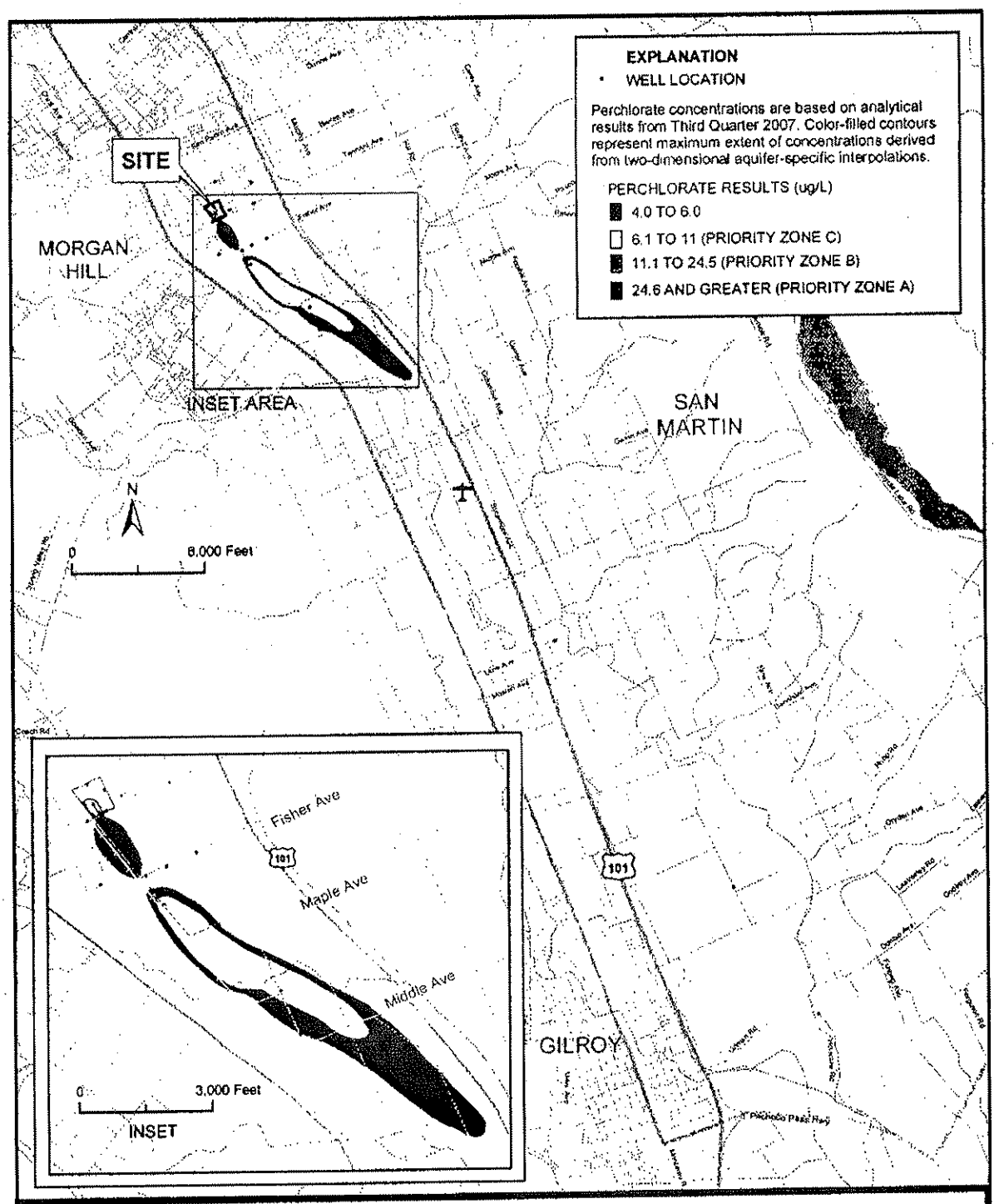


FIGURE 3
SHALLOW AQUIFER PERCHLORATE PLUME
Olin Corporation

(MACTEC, 10/30/2007–Third Quarter 2007 Groundwater Monitoring Report, Figure 3.21)

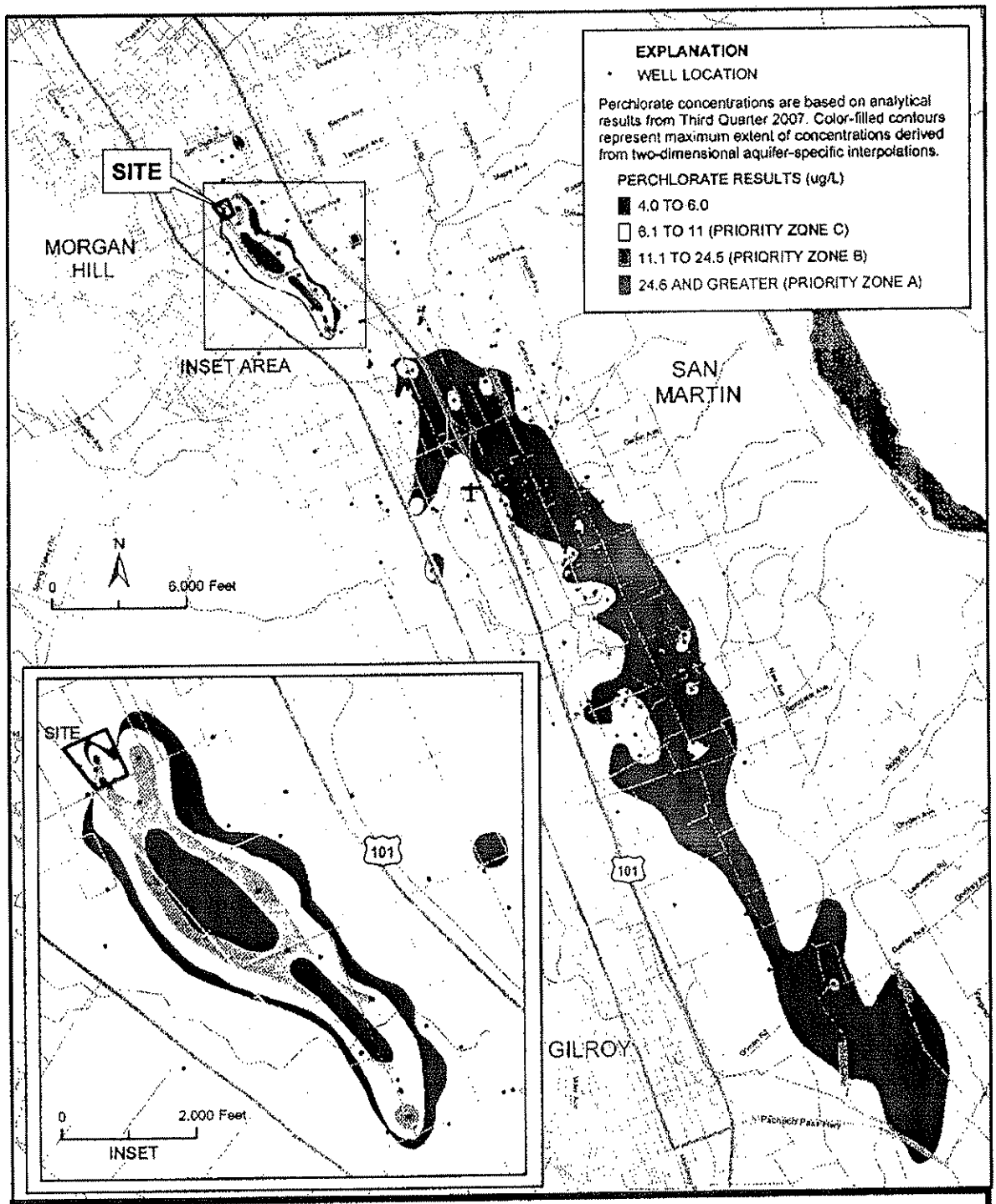


FIGURE 4
INTERMEDIATE AQUIFER PERCHLORATE PLUME
Olin Corporation

(MACTEC. 10/30/2007–Third Quarter 2007 Groundwater Monitoring Report, Figure 3.22)

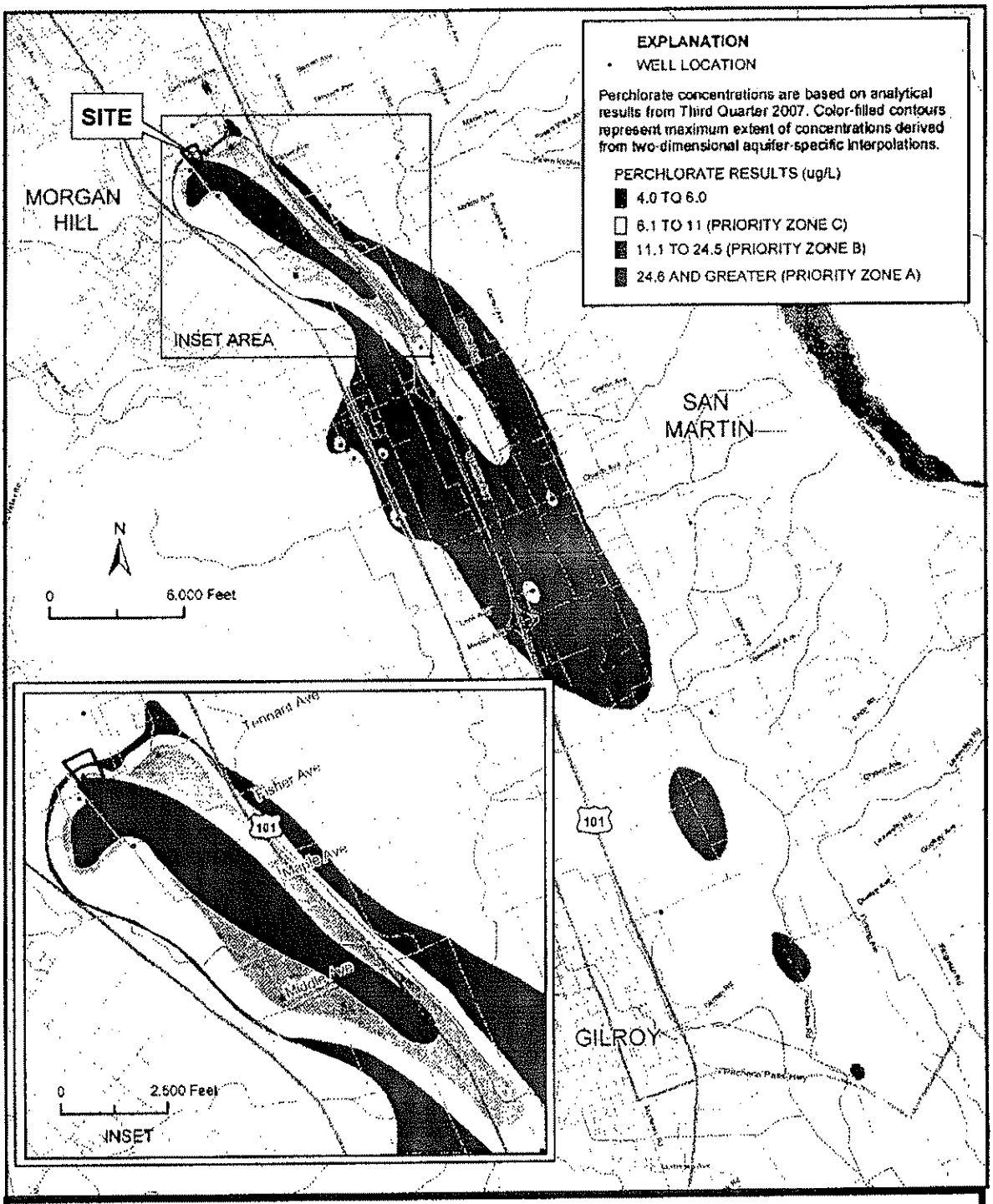


FIGURE 5
DEEP AQUIFER PERCHLORATE PLUME
Olin Corporation

(MACTEC 10/30/2007–Third Quarter 2007 Groundwater Monitoring Report, Figure 3.23)

PETITION EXHIBIT 2

Declaration of Mr. James Ashcraft

I, James Ashcraft, do hereby declare:

1. If called upon as a witness, I could testify of my own personal knowledge as set forth below:

2. I am the current Director of the Department of Public Works for the City of Morgan Hill. I have held this job since 08/14/1995. The operation of the City's water system has always been under my direct control.

3. I received a BS degree in Civil Engineering from California Polytechnic University in 1976 and have been licensed by the State of California as a Registered Civil Engineer since 1978.

4. My experience in designing, constructing and operating municipal water systems has been continuous for the past 30 years. For the past 23 years (in 3 different California cities) I have served as Public Works Director/City Engineer directly responsible for the design, construction and operation of municipal water supplies.

5. The Tennant Well tested at 5.1 ppb perchlorate on 4/30/01, when the Action Level (now Notification Level) was still 18.0 ppb. Tennant tested at 5.5 ppb perchlorate on 4/17/02, (after the Action Level was lowered to 4.0 ppb) and was removed from service.

6. Originally the City was amenable to keeping the Tennant Well offline because Olin Corporation agreed to pay for the costs of replacing it with a new well, the San Pedro Well. The San Pedro Well had been considered before to meet the growing needs of the City and was going to be operated along with the Tennant Well. The money from Olin allowed the City to expedite the drilling of San Pedro. The City had also always intended to drill more wells during the 2000 -2020 horizon to meet anticipated growth.

7. The San Pedro Well, while also testing positively for perchlorate, has not proved to produce sufficient volume to serve the City's customer without the use of the Tennant Well. Additionally, another NE City well, the Condit Well tested at 5 ppb in February 2003 and has been off line since that time. The Condit Well is the closest NE well to the Olin site. It is a very small well (200 gpm) and its operation makes marginal economic sense. Therefore, to meet the needs of the City especially for the summer of 2004, the Tennant Well was put back into operation on 10/7/04 with an Ion Exchange perchlorate removal system. By letter of May 11, 2004, the Regional Water Quality Control Board suggested that the operation of the Tennant Facility be on a 24/7 basis. To date, the City has operated the Tennant Facility continuously in accordance with that request.

8. Since the commencement of operation of the San Pedro Well, the City has looked for additional ground water supplies. The City drilled three separate unsuccessful wells in various locations within the City. The Peet Well was drilled in April, 2003; the Mission View Well was drilled in September 2006; and the Half Road Well was drilled in September, 2007. Unfortunately, all three of these wells failed to produce sufficient water and have been abandoned.

EXHIBIT 2

9. In 2001 the population of the City of Morgan Hill was 34,600; in 2004 the population was 35,500 and currently it is 38,400. The City's Master Plan calls for further growth such that in 2010 the expected population is projected at 41,000 and in 2020 the projection is 48,000. The need for more water has been and remains clear and the need therefore to operate the Tennant Well, a reliable source of water, is imperative.

10. The Santa Clara Valley Water District paid for certain lease costs and other related items for the perchlorate removal system on the Tennant Well for two years. Notwithstanding that, the City has spent more then $300,000 of rate payer funds on system permitting, operation and maintenance ("O&M") since the decision was made to employ the use of the IX system. The City expects that the future annual cost of O&M and lease on the equipment will be on the order of $120,000 per year.

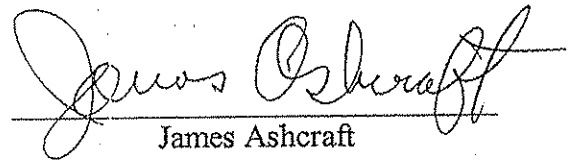
11. The City has had to fund its perchlorate related activities including the costs associated with the Tennant Well through a 15% surcharge on its rate payers' monthly bills.

12. Since the commencement of operation through September, 2007 of the Tennant Wells IX treatment system, I have calculated that this well has pumped approximately 591,000,000 gallons of contaminated water and the treatment system has removed 63 pounds of perchlorate.

13. The Tennant Well has been tested at least weekly and at some times daily to determine its perchlorate content. For the first half of 2007 the levels were no lower than 4, most readings were 6 ppb, with one result of 7 ppb on 1/23/2007, and since July 2007 they have been constant at 6ppb.

14. I have reviewed and am familiar with the new MCL and its related documentation issued by the Department of Public Health. Given the now existing MCL, for the Tennant Facility to continue to operate, it must continue using the perchlorate removal equipment.

I declare the foregoing to be true and correct. Executed this 1st day of November, 2007 in Morgan Hill, California.



James Ashcraft

PETITION EXHIBIT 3

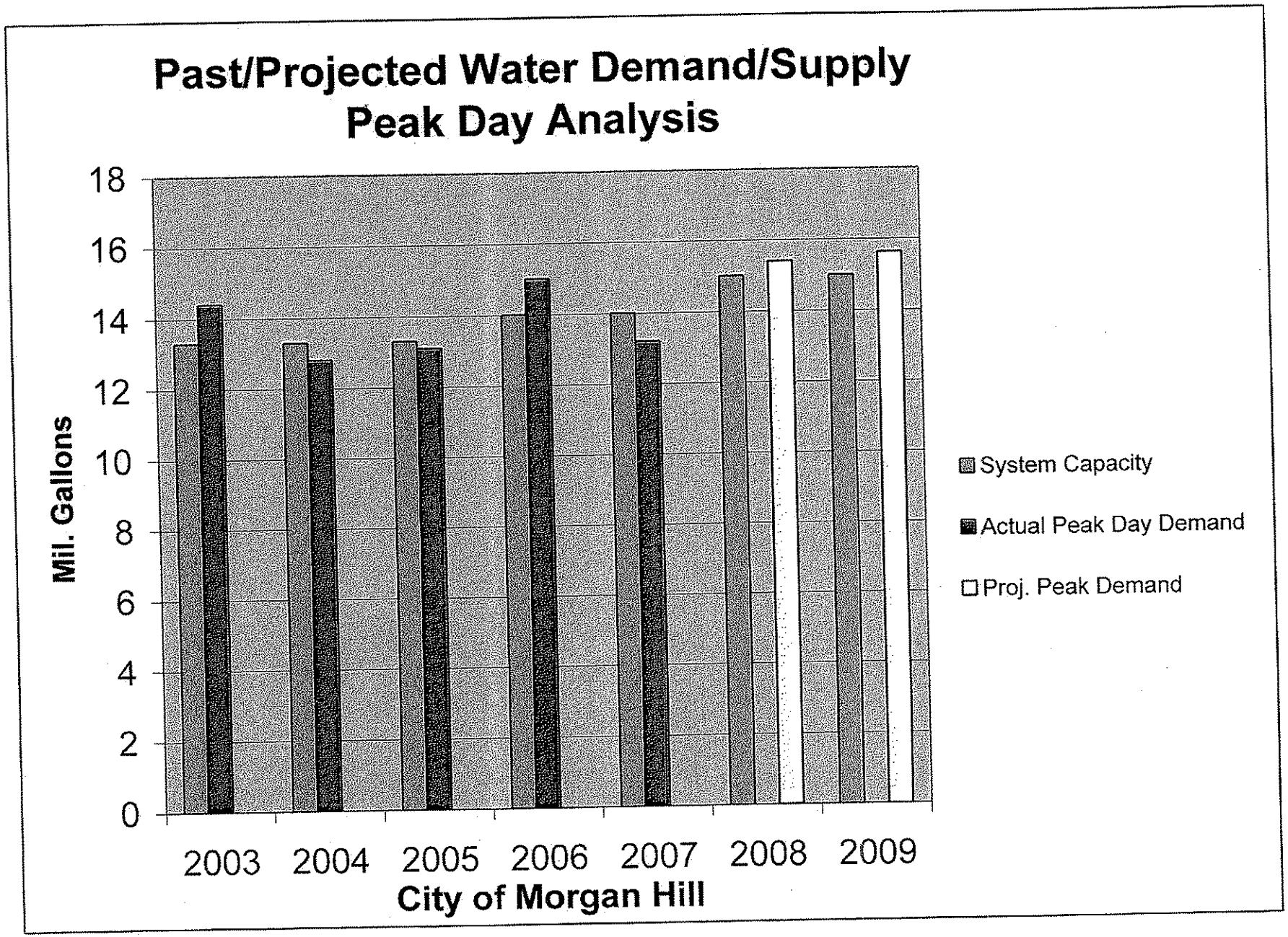

Past/Projected Water Demand/Supply
Peak Day Analysis
Mil. Gallons
18
16
14
12
10
8
6
4
2
0
2003
2004
2005
2006
2007
2008
2009
City of Morgan Hill
System Capacity
Actual Peak Day Demand
Proj. Peak Demand

EXHIBIT 3

PETITION EXHIBIT 4

11911 San Vicente Boulevard, Suite 350
Los Angeles, CA 90049
Telephone: (310) 500-4600
Fax: (310) 500-4602

HATCH & PARENT
A Law Corporation

Steven L. Hoch

(310) 500-4611
SHoch@HatchParent.com

November 8, 2007

Via E-Mail and First Class Mail

Mr. Roger Briggs
Regional Water Quality Control Board
Central Coast Region
895 Alta Vista Place, Suite 101
San Luis Obispo, California 93401

Re: Hearing of December 7, 2007
Olin Corporation, 425 Tennant Ave., Morgan Hill, CA
Request for Replacement Water

Dear Mr. Briggs:

This letter serves as a request by the City of Morgan Hill ("City") to the Regional Water Quality Control Board Central Coast Region ("RWQCB") for a Clean Up and Abatement Order ("CAO"). This CAO should be issued requiring Olin Corporation to provide for wellhead treatment as replacement water at the City's Tennant Well. This order should be issued pursuant to Water Code §13304(a).

The City requests that this item be placed on the agenda for the December 7, 2007 RWQCB hearing. At this same meeting, the Proposed CAO regarding the Olin Corporation will be discussed. It would be both prudent and efficient to deal with the request for replacement water at that time. Please advise immediately as to your decision concerning placing this item on the agenda.

The basis for this request for replacement water is detailed below.

1. **Water Code**

(a) **Water Code Section 13304(a)**

Water Code Section 13304(a) was amended in 2004 to include the following sentence:

> A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner.

EXHIBIT 4

The only further definition offered as to what replacement water means is found in subsection (f) which states:

> Replacement water provided pursuant to subdivision (a) shall meet all applicable federal, state, and local drinking water standards, and shall have comparable quality to that pumped by the public water system or private well owner prior to the discharge of waste.

The Legislative Counsel's Digest reports in its comments regarding SB 1004 (Soto) which sought to amend Water Code Section 13304:

> This bill would provide that a cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service to each affected public water supplier or private well owner.

Assembly Floor, 3d reading analysis of Sen. Bill No. 1004 (2003-2004 Regular Session) September 9, 2003, page 5 provides:

> b) The most significant changes made to the original language of SB 1004 by the most recent amendments are primarily directed at eliminating the reporting requirements to the water boards of a perchlorate discharge, and at exempting military munitions from the reporting requirements for perchlorate materials storage.
>
> 3) Replacement water issues: On occasion, the boards have included in their cleanup and abatement orders a requirement that the responsible party provide replacement water. The boards seldom do this, however. In 2002, for example, SWRCB issued twenty drinking water cleanup orders, but not one required the provision of replacement water.
>
> a) Some responsible parties have challenged the boards' authority to require replacement water. This bill authorizes SWRCB, as part of a cleanup and abatement order, to require the responsible party to either provide or pay for a replacement supply, removing the possibility of a challenge to the board's authority.
>
> b) Arranging and paying for a replacement water supply can be expensive for public water systems, and smaller systems may be financially overwhelmed. The City of Colton, for instance, was forced to pay $4,000 per day to provide water to its residents after perchlorate was found to be contaminating most of the city's wells.

It is clear that the purpose of this legislation was to allow a water system to be put back in a comparable position as it would be before the contamination impacting its supply.

2. "Replacement"

The statute contains no definition of what replacement is. The words of a statute are given their ordinary and usual meaning and are construed in the context of the statute as a whole and the entire scheme of law of which it is a part. Mejia v. City of Los Angeles, 2007 WL 3016529, 3 (Cal.App. 2 Dist.,2007). "If the language is clear and a literal construction would not result in absurd consequences that the Legislature did not intend, the plain meaning governs." Id.

Merriam Webster's Dictionary On Line provides the following definitions:

> Replacement: the action or process of replacing: the state of being replaced.[1]
>
> Replaced: 1:to restore to a former place or position 2:to take the place of especially as a substitute or successor[2]

3. The RWQCB Agrees that the Use of Tennant is Replacement Water

On May 13, 2003, the RWQCB sent a letter to Mr. Richard McClure of Olin Corporation. (Attachment 1). The letter was written in light of the need to use the Tennant Well to deal with "severe water shortages this summer, especially with the shutdown of three other wells due to sporadic detections of perchlorate."[3] In this same letter the RWQCB advised Olin that the:

> Regional Board may require Olin to abate the effects of its discharge of waste. Consequently, the Board may require Olin to provide the City with an alternative water supply or take other actions to abate, among other things, the City's inability to use the Tennant Avenue well.

The RWQCB goes on to suggest that Olin "work cooperatively with ... the City of Morgan Hill to coordinate purchase, installation, operation and maintenance of a wellhead treatment system." No discussions have ever taken place regarding the treatment system at Tennant.

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[1] http://www.merriam-webster.com/dictionary/replacement

[2] http://www.merriam-webster.com/dictionary/replaced

[3] The wells in question were Nordstrom and Condit. The City installed an ion exchange system on Nordstrom and employed its use as soon as it was operable. The Condit well, which had significantly high readings of perchlorate was idled and has remained idled.

4. Background Facts

(a) Contamination Levels

The Tennant Well tested at 5.1 ppb perchlorate on 4/30/01, when the Action Level (now Notification Level) was still 18.0 ppb. Tennant tested at 5.5 ppb perchlorate on 4/17/02, (after the Action Level was lowered to 4.0 ppb) and was removed from service.

The Tennant Well has been tested at least weekly, and at some times daily, to determine its perchlorate content. For the first half of 2007 the levels were no lower than 4ppb and reached 6ppb on numerous occasions (and on 1/23/07 the reading was 7ppb) and since July 2007 they have always been at 6ppb. Because of the MCL set recently by the California Department of Health, the continued operation of the Ion Exchange treatment system would be necessary to operate the Tennant Well.

(b) San Pedro Well

Originally the City was amenable to keeping the Tennant Well offline because Olin Corporation agreed to pay for the costs of replacing it with a new well, which turned out to be the San Pedro Well. The City had previously planned to use the San Pedro Well to meet the growing needs of the City and was going to operate it along with the Tennant Well. The money from Olin allowed the City to expedite the drilling of San Pedro. The City had also always intended to drill more wells to meet anticipated growth.

The San Pedro Well, while also testing positively for perchlorate, has not proved to produce sufficient volume of water to serve the City's customers without the use of the Tennant Well. Additionally, another NE City well, the Condit Well, tested at 5 ppb in February 2003 and has been off line since that time. The Condit Well is the closest NE well to the Olin site. It is a very small well (200 gpm) and its operation makes marginal economic sense. Therefore, to meet the needs of the City, especially for the summer of 2004, the Tennant Well was put back into operation on 10/7/04 with an Ion Exchange perchlorate removal system. By letter of May 11, 2004, the Regional Water Quality Control Board suggested that the operation of the Tennant Facility be on a 24/7 basis. To date, the City has operated the Tennant Facility continuously in accordance with that request.

(c) No further water is available and it is needed

In 2001 the population of the City was 34,600; in 2004 the population was 35,500 and currently it is 38,400. The City's Master Plan calls for further growth such that in 2010 the expected population is projected at 41,000 and in 2020 the projection is 48,000. The need for more water has been and remains clear and the need to operate the Tennant Well, a reliable source of water, is imperative.

Since the commencement of operation of the San Pedro Well, the City has looked for additional ground water supplies. The City drilled three separate unsuccessful wells in various locations within the City. The Peet Well was drilled in April, 2003; the Mission View Well was drilled in September 2006; and the Half Road Well was drilled in September, 2007. Unfortunately, all three of these wells failed to produce sufficient water and have been abandoned.

5. **The City is entitled to a CAO ordering Olin to Provide for Wellhead Treatment at the Tennant Well**

The contribution made by Olin Corporation to fund the earlier then anticipated drilling of the San Pedro Well was not made as part of a RWQCB approved "water replacement plan." See § 13304(h)(i). Consequently, this payment only served to buy Olin some time before the City pursued its remedies under § 13304, which includes "replacement water" and may include well head treatment. That time has now arrived. The San Pedro well does not produce enough water to "replace" the need for operating the Tennant Well with its perchlorate removal system and, thus, at this time it can not be considered a replacement for the Tennant Well which is the only other source of water for the City.

Given the above, the RWQCB is completely within its power to order that Olin supply the City with replacement water, which logically here would be achieved by Olin's payment for the operation of the Tennant Well Ion Exchanger System until such time that the City can find sufficient water to meet its needs.

Very truly yours,

Steven L. Hoch
For HATCH & PARENT
A Law Corporation

cc: Mr. Ed Tewes
Mr. Jim Ashcraft
Ms. Janet Kern

LA 13711 v3:010371.0001

PETITION EXHIBIT 5

Senate Bill No. 1004

CHAPTER 614

An act to amend Sections 13271 and 13304 of, and to add Chapter 8.5 (commencing with Section 13610) to Division 7 of, the Water Code, relating to resources.

[Approved by Governor September 29, 2003. Filed with Secretary of State September 29, 2003.]

LEGISLATIVE COUNSEL'S DIGEST

SB 1004, Soto. Resources.

(1) Existing law, the Porter-Cologne Water Quality Control Act, with certain exceptions, requires a person who causes or permits any hazardous substance or sewage to be discharged in any waters of the state, or where it may be so discharged or deposited, to immediately notify the Office of Emergency Services. The act makes any person who fails to provide the notice guilty of a misdemeanor that is punishable by a fine of not more than $20,000 or imprisonment for not more than one year, or both.

This bill, for the purposes of this provision, would require the reportable quantity for perchlorate to be 10 pounds or more by discharge to the receiving waters, unless a more restrictive reporting standard is adopted for a particular body of water. By changing the definition of a crime, this bill would impose a state-mandated local program.

(2) Existing law, the Porter-Cologne Water Quality Control Act, requires a person who discharges waste into the waters of the state in violation of waste discharge requirements or other order or prohibition issued by a California regional water quality control board or the State Water Resources Control Board, upon the order of that regional board or the state board, to clean up the waste or to abate the effects of the waste. The act subjects a person who violates a cleanup or abatement order to civil penalties.

This bill would provide that a cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service to each affected public water supplier or private well owner. The bill would require a regional board or the state board to request a water replacement plan from the discharger prior to the provision of the replacement water in certain cases. The bill would provide for mediation of replacement water claims.

LIS - 1h

EXHIBIT 5

(3) Existing law, with certain exceptions, requires a person who causes or permits any oil or petroleum product to be discharged in any waters of the state, or where it may be so discharged, to immediately notify the Office of Emergency Services. The act makes any person who fails to provide the notice guilty of a misdemeanor that is punishable by a fine of at least $500, and not more than $5,000, for each day of failure to notify.

The act requires each California regional water quality control board, every 3 months, to publish and distribute to all public water system operators within the region a list of discharges of MTBE that occurred during the prior 3-month period and a list of locations where MTBE was detected in the groundwater within the region.

This bill, on or before January 1, 2005, and annually thereafter, subject to certain exceptions, would require an owner or operator of a storage facility that has stored in any calendar year since January 1, 1950, over 500 pounds of perchlorate to submit to the state board, to the extent feasible, certain information relating to that storage. The bill would authorize the State Water Resources Control Board to charge an annual fee to each owner of a storage facility that provides certain information to the board. The fees would be required to be deposited in the State Water Quality Control Fund, to be available to the state board upon appropriation by the Legislature. The bill would require the state board to submit the perchlorate storage information to the Secretary for Environmental Protection upon notification from that secretary that he or she has established a database that is able to receive perchlorate inventory information.

The bill would make persons who fail to provide notifications relating to the discharge or storage of perchlorate civilly liable and would require the funds generated by the imposition of civil liability to be available to the state board, upon appropriation by the Legislature. The bill would require the state board to publish, compile, maintain, and make available for public review the information relating to the storage of perchlorate.

(4) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

The people of the State of California do enact as follows:

SECTION 1. Section 13271 of the Water Code is amended to read:

PETITION EXHIBIT 6

BILL ANALYSIS

SENATE THIRD READING
SB 1004 (Soto)
As Amended September 9, 2003
Majority vote

SENATE VOTE :25-13

ENVIRONMENTAL SAFETY 5-0
APPROPRIATIONS 15-8

Ayes:	Laird, Chu, Levine, Lieber, Lowenthal	Ayes:	Steinberg, Berg, Calderon, Corbett, Diaz, Goldberg, Leno, Nation, Negrete McLeod, Nunez, Pavley, Ridley-Thomas, Simitian, Wiggins, Yee
		Nays:	Bates, Correa, Daucher, Haynes, Maldonado, Pacheco, Runner, Samuelian,

SUMMARY : Provides that a cleanup and abatement order issued by the State Water Resources Control Board (SWRCB) or a regional water quality control board (RWQCB) may require each discharger to provide or pay for uninterrupted replacement water service to each affected public water supplier or private well owner. It also establishes a database collection system under the auspices of SWRCB for reporting on the storage of perchlorate. Specifically, this bill :

1) Provides that a cleanup and abatement order issued by SWRCB or RWQCB may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner. The bill also states that this authority is declarative of existing law.

2) Specifies that the replacement water shall meet all applicable federal, state, and local drinking water standards and shall be comparable in quality to the water pumped by the public water supplier or private well owner prior to the discharge of

EXHIBIT 6

waste.

3) Allows any person (public or private) receiving such replacement water, or providing such replacement water, to request nonbinding mediation ("mediation") of all replacement water claims.

   a) If mediation is requested, the public water supplier receiving the replacement water and the persons ordered to provide the water shall engage in at least one confidential settlement discussion before a mutually acceptable mediator within 30 days of the submittal of a water replacement plan (WRP).

   b) Any agreement between the parties resulting from that mediation shall be consistent with the requirements of any cleanup or abatement order.

   c) Neither SWRCB nor RWQCB need participate in any requested mediation.

4) Specifies that WRP shall be required by SWRCB or RWQCB from a discharger in a case where the discharger is going to be required to supply replacement water for more than 30 days. WRP is defined as "a plan pursuant to which the discharger will provide replacement water in accordance with a cleanup and abatement order." WRPs are subject to the approval of SWRCB or RWQCB prior to implementation.

5) Requires anyone discharging 10 pounds or more of perchlorate into the waters of the state to immediately notify the Office of Emergency Services (OES).

6) Makes a failure to notify of a perchlorate discharge subject to civil liability. If the civil liability is administratively imposed, it has a maximum of $1,000 per day penalty. If it is imposed by a superior court, the maximum penalty amount for each day is not less than $500 or more than $5,000.

7) Requires the owner or operator of a facility who has stored, in any calendar year, more than 500 pounds of perchlorate since January 1, 1950, to provide specified information, to the extent feasible, regarding such storage. The report should discuss the volume, method and location of perchlorate

storage.

8) Authorizes SWRCB to charge a fee not to exceed $100 to each owner of a storage facility that provides information to SWRCB. Specifies that the fees shall be deposited in the State Water Quality Control Fund and be available to SWRCB upon appropriation by the Legislature.

9) Requires SWRCB to compile and keep all information centrally located and available for public review by January 1, 2006.

10) Defines "perchlorate" to mean all perchlorate-containing compounds, including ammonium, potassium, magnesium, and sodium perchlorate. The bill excludes from this definition all perchlorate-containing compounds found on or after January 1, 2004, "in unused military munitions as defined in Section 260.10 of Title 40 of the Code of Federal Regulations."

11) Defines a perchlorate storage facility to exclude a military munitions storage facility that meets the Department of Defense Explosive Safety Board Requirements set forth in DOD 605.9-STD." ((Section 605.9 facility).

12) Exempts from the annual storage reporting requirements a facility which stores perchlorate for retail purposes or for law enforcement purposes, as well as drinking water storage reservoirs.

EXISTING LAW :

1) Requires the issuing of discharge permits, in accordance with the federal Clean Water Act and the Porter-Cologne Act, for all point discharges of pollutants to surface waters. All other discharges that could impact water quality or beneficial uses require waste discharge permit unless waived by the regional board.

2) Requires the State Office of Environmental Health Hazard Assessment to adopt a public health goal for contaminants found in drinking water in order to guide the development of primary drinking water standards by the State Department of Health Services.

3) Requires any business handling specified hazardous materials

greater than 500 pounds per year to establish and implement a

business plan for emergency response to a release or threatened release of hazardous materials in accordance with prescribed standards in accordance with the Hazardous Materials Release Response Plans and Inventory Act.

4) Requires each RWQCB to publish and distribute information every three months to all public water system operators regarding discharges of methyl t-butyl ether (MTBE) within the region.

5) Requires SWRCB to integrate existing monitoring programs with a comprehensive groundwater-monitoring program.

6) Requires a person who discharges any hazardous substance or sewage into the waters of the state to also inform the OES. Failure to notify OES of the discharge is subject to a maximum of a $20,000 fine and imprisonment of one year.

FISCAL EFFECT : According to the Assembly Appropriations Committee analysis:

1) Minor costs, about $35,000 annually starting in fiscal year 2004-05, to SWRCB to process the perchlorate storage information and to prepare a list of past and present storage facilities in California; these costs are potentially covered by revenue generated from a $100 annual submission fee imposed on storage facility owners who provide the required information to SWRCB. (State Water Quality Control Fund.)

2) The new provisions that were rooted in SB 922 were not identified as having significant costs to the water boards according to the Senate Appropriations Committee. However there might be some costs associated with the WRP review.

COMMENTS :

1) Purpose of bill: This bill has two primary purposes. First it would establish clearly that the water boards have the authority to require replacement water be provided as part of a cleanup and abatement order. Second, it would require owners of facilities that have disposed of perchlorate since January 1, 1950, to disclose to SWRCB information on the volume of perchlorate disposed of, the method of disposal, and

history of releases of perchlorate to the environment. This bill would also levy a fee on perchlorate for the purpose of

publishing information and administering this act.

2) Evolution of SB 1004: The provisions of this bill as most recently amended now incorporate the provisions of SB 922 (Soto) in addition to the original provisions of SB 1004 by the same author. Both bills were heard by Environmental Safety and SB 922 was also referred to Water, Parks and Wildlife. It should also be noted that the language deriving from SB 922 is not limited to perchlorate contamination, but the provisions derived from SB 1004 are limited to circumstances stemming from perchlorate storage and use.

   a) The most significant changes to the SB 922 provisions, as heard by Environmental Safety, establish a planning process where water boards require replacement water be provided for a period greater than 30 days. In such cases, WRP must be developed and presented to the relevant water board.

   b) The most significant changes made to the original language of SB 1004 by the most recent amendments are primarily directed at eliminating the reporting requirements to the water boards of a perchlorate discharge, and at exempting military munitions from the reporting requirements for perchlorate materials storage..

3) Replacement water issues: On occasion, the boards have included in their cleanup and abatement orders a requirement that the responsible party provide replacement water. The boards seldom do this, however. In 2002, for example, SWRCB issued twenty drinking water cleanup orders, but not one required the provision of replacement water.

   a) Some responsible parties have challenged the boards' authority to require replacement water. This bill authorizes SWRCB, as part of a cleanup and abatement order, to require the responsible party to either provide or pay for a replacement supply, removing the possibility of a challenge to the board's authority.

   b) Arranging and paying for a replacement water supply can be expensive for public water systems, and smaller systems

may be financially overwhelmed. The City of Colton, for instance, was forced to pay $4,000 per day to provide water to its residents after perchlorate was found to be

contaminating most of the city's wells.

4) WRP process: The bill requires WRP to be developed when replacement water must be provided for more than 30 days. The bill also allows any person (public or private) receiving such replacement water, or providing such replacement water, to request nonbinding mediation of all replacement water claims. This mediation is meant to make sure that all parties meet at least once if there is controversy over the ordered replacement water or WRP.

   a) If mediation is requested, the public water supplier receiving the replacement water and the persons ordered to provide the water shall engage in at least one confidential settlement discussion before a mutually acceptable mediator within 30 days of the submittal of a water replacement plan (WRP). The bill is silent as to the participation of private well owners in the mediation although they are authorized to request one.

   b) To keep the state costs at a minimum, there is no requirement that SWRCB or RWQCBs participate in any requested mediation. The costs of the mediation are borne by the party requesting the mediation.

5) Perchlorate Storage and Monitoring Issues: According to the Natural Resources Defense Council, "Perchlorate has contaminated water sources including the Colorado River and at least three Inland-area groundwater basins. Contamination also taints underground water supplies in Sacramento, Los Angeles, Santa Clara, Orange, Sonoma, Tulare, Ventura, and San Diego counties. In fact, perchlorate contaminates three times as many drinking water sources in California as MTBE."

   a) Supporters are concerned that despite the gravity of perchlorate contamination throughout California, there exists no comprehensive monitoring program to detect and track present and past releases of the pollutant to the environment. Unlike the Underground Storage Tank Fund, which provides resources to cleanup and control MTBE

contamination, no such fund supports efforts to limit perchlorate contamination.

b) Proponents believe the research funded by this bill will quantify the current and possible future perchlorate

releases and with this knowledge further contamination would be prevented.

6) The author has taken several amendments to this portion of the bill relating to perchlorate which appears to address concerns expressed by opponents to previous versions of the measure. Those changes include deleting the requirement that perchlorate discharges be reported to the RWQCB which would then pass on the information to the SWRCB. The changes also set a minimum quantity for perchlorate of ten pounds before a discharge needed to be reported to OES. The measure still allows the use of data on storage facilities that has been submitted to other agencies for other purposes.

7) The other significant changes to the measure seem focused on exempting certain military munitions (particularly unused military munitions) and material stored in a particular type of military facility.

Analysis Prepared by : Michael Endicott / E.S. & T.M. / (916) 319-3965

FN: 0003960

PETITION EXHIBIT 7

Date of Hearing: July 8, 2003

ASSEMBLY COMMITTEE ON WATER, PARKS AND WILDLIFE
Joseph E. Canciamilla, Chair
SB 922 (Soto) – As Amended: June 2, 2003

SENATE VOTE: 25-12

SUBJECT: Cleanup or abatement orders for contaminated drinking water supplies.

SUMMARY: Provides that a cleanup and abatement order issued by the State Water Resources Control Board (SWRCB) may require each discharger to provide or pay for uninterrupted replacement water service to each affected public water supplier or private well owner. Specifically, this bill:

1) Provides that SWRCB may require a discharger to provide or pay for replacement water service to water suppliers or persons affected by a discharge of waste into their water supply.

2) Requires that the replacement water must meet all applicable water quality standards and be comparable in quality to the water that was provided by the water supplier or well owner before the contamination.

EXISTING LAW requires a person who discharges waste into the water of the state in violation of waste discharge requirements to clean up the waste or abate the effects of the waste, upon an order of SWRCB or a regional water quality control board.

FISCAL EFFECT: Unknown. The bill does not make an appropriation.

COMMENTS: California faces some major water contamination problems. Perchlorate, a component of rocket fuel, has been found in underground water supplies, as well as MTBE, a gasoline additive. According to proponents of this bill, 70 billion gallons of potential drinking water go unused each year due to contamination. This is enough to supply 400,000 families for a year.

When a person or entity (responsible party) contaminates a water supply, either above or below ground, one of the consequences may be the need for users of that water supply to seek alternative supplies. Under the Porter-Cologne Water Quality Control Act, SWRCB and the nine regional water quality control boards are authorized to issue cleanup and abatement orders to persons or corporations that have discharged contaminants into water supplies, either above or below ground.

On occasion, the boards have included in their cleanup and abatement orders a requirement that the responsible party provide replacement water. The boards seldom do this, however. In 2002, for example, SWRCB issued twenty drinking water cleanup orders, but not one required the provision of replacement water.

Some responsible parties have challenged the boards' authority to require replacement water. This bill authorizes SWRCB, as part of a cleanup and abatement order, to require the responsible

EXHIBIT 7

party to either provide or pay for a replacement supply, removing the possibility of a challenge to the board's authority.

Requiring responsible parties to pay for replacement water ensures that consumers receive a healthful supply, while taking the financial burden off of local water agencies. Arranging and paying for a replacement water supply can be expensive for public water systems, and smaller systems may be financially overwhelmed. The City of Colton, for instance, was forced to pay $4,000 per day to provide water to its residents after perchlorate was found to be contaminating most of the city's wells.

Opponents make a variety of arguments. Among others, they argue that a court of law is the proper forum for determining damages and injunctive remedies to public water suppliers through a civil action. They maintain that a public water supplier has an obligation to seek damages through the courts, that would be relieved through this bill.. They also maintain that determining the quantity, quality, and timing of replacement water raises complicated issues that can only be fairly managed by the courts or through equitable agreement between the affected water purveyors and the parties responsible for the contamination.

One reason that the issues of providing replacement water are so complex, is that there are often many responsible parties involved in the contamination of a water supply. According to opponents, apportionment of the costs is better left to the courts, which have established procedures. SWRCB and the regional boards do not have this procedural expertise.

The counter-argument is that giving SWRCB this authority will allow the apportionment of costs to take place between the responsible parties and the affected water suppliers in an administrative setting outside of the courts. This will allow for more timely provision of replacement water supplies, and save litigation expenses. Since the order for replacement water will be part of a cleanup and abatement order, SWRCB will already have done the underlying investigative work to identify the responsible parties. Local water agencies can account for the amount of water they have to buy, or that they can no longer pump from their wells.

Under existing law, the boards' orders may be appealed to the courts. This bill removes from challenge the issue of SWRCB's authority to require replacement water, but still allows appeals of the amount and the apportionment of costs charged to responsible parties.

The Environmental Safety and Toxic Materials Committee (ES&TM) proposed two amendments, which the author committed to accept as author's amendments. These amendments were not made available to the committee in time for the bill to be in print for this hearing. The amendments make the following changes to the bill:

1) The amendments authorize the regional boards, as well as SWRCB, to require replacement water as part of their cleanup and abatement orders.

2) The amendments delete a definition of "potential drinking water supply", as it is a term that was only used in an earlier version of the bill.

Following the hearing in ES&TM on July 1, ChevronTexaco offered a set of amendments that do the following:

1) Include payment of costs reasonably incurred by a public water supplier for the provision of replacement water or for water treatment facilities for public water systems whose wells are contaminated among the actions that the boards may order to abate the effects of waste.

2) Specify that a responsible party may only be required to pay the costs that are attributable to contamination attributable to that party, but shall not include costs related to other contaminants in the water.

3) Allows an appeal of the award of costs of replacement water by SWRCB or a regional board in superior court.

4) Allows a person subject to an order awarding costs of replacement water to seek binding arbitration to determine and apportion the costs.

5) Includes among the reasonable costs that may be recovered by a public water supplier the costs of litigation or arbitration and related actions.

6) Defines applicable water quality standards as the quality of drinking water deemed suitable by the Department of Health Services (DHS), treated with the best available treatment technology, or if the best available treatment technology does not exist for the contaminant, water treated in a technologically and economically feasible manner based on the action level established by DHS.

ChevronTexaco contends that these amendments will help to avoid litigation by:

- Defining more clearly the scope of the boards' authority;
- Defining the extent of liability of a responsible party;
- Spelling out the procedures for appeal;
- Allowing binding arbitration as an alternative to review by a court; and,
- Defining applicable water quality standards.

A review of these amendments, however, indicates that they may tend to involve SWRCB and the regional boards in legal disputes over which responsible party should pay which amount, causing the boards to incur substantial legal costs. The general purpose of the bill is to provide administrative remedies to injured water users and suppliers that will avoid extensive litigation.

REGISTERED SUPPORT / OPPOSITION:

Support

Association of California Water Agencies (ACWA)
CA Citizens for Health Freedom, Inland Empire Chapter
California League of Conservation Voters
Contra Costa Water District
Environment California
Environmental Working Group
Groundwater Resources Association of California
Inland Empire Utilities Agency
Sierra Club California
Southern California Water Committee, Inc.
2 individuals

Opposition

California Council for Environmental and Economic Balance (CEEB)
California Manufacturers & Technology Association
GenCorp
Lockheed Martin Corporation

Analysis Prepared by: Jeffrey Volberg / W., P. & W. / (916) 319-2096

PETITION EXHIBIT 8

Date of Hearing: July 1, 2003

ASSEMBLY COMMITTEE ON ENVIRONMENTAL SAFETY AND TOXIC MATERIALS
John Laird, Chair
SB 922 (Soto) – As Amended: June 2, 2003

SENATE VOTE: 25-12

SUBJECT: Cleanup or Abatement Orders: Contaminated Drinking Water Supplies

SUMMARY: Clarifies existing law by explicitly authorizing the State Water Resources Control Board (SWRCB) to require a discharger to provide, or pay for, uninterrupted replacement water service to affected public water suppliers or private well owners. Specifically, this bill:

1) Explicitly states that a cleanup and abatement order issued by SWRCB may require each discharger to provide or pay for uninterrupted replacement water service to each affected public water supplier or private well owner.

2) Provides that the replacement water shall meet all applicable federal, state, and local water quality requirements and shall be comparable in quality to that provided by the public water supplier or private well owner prior to the contamination.

3) Defines "potential drinking water supply" as a supply that is scheduled for use as indicated by an urban water management plan.

EXISTING LAW requires a person who discharges waste in a manner that may affect water quality to report the discharge to the regional water quality control board and obtain a water quality permit known as "waste discharge requirements."

Authorizes the regional board to issue a cleanup and abatement order to any person in violation of waste discharge requirements or who discharges waste where it will cause a condition of pollution or nuisance. The cleanup and abatement order requires the correction of the violation, the cleanup of the discharged waste and the abatement of environmental effects caused by the discharge.

FISCAL EFFECT: According to Senate Appropriations Committee analysis, this bill would not result in new costs to the SWRCB because this is an existing responsibility.

COMMENTS:

1) The sponsor, Environment California, notes that despite the impact of drinking water pollution local water supplies, state regulatory agencies do not hold polluters responsible for providing safe replacement water to the communities they have harmed. According to the sponsor, of the twenty drinking water cleanup orders issued by the state board in 2002, in no case did the state or regional boards require the polluter to calculate the volume of water contaminated. In fact, they contend, although they assert that the water boards already have this authority, they contend that replacement orders have only been issued three times.

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2) The Inland Empire Utilities Agency writes in support of the measure that its sole source of drinking water has been contaminated by perchlorate. It feels a clear statement of authority to require polluters to provide replacement water services is important. The Santa Clara Valley Water District has recently detected extensive contamination by perchlorate in Morgan Hill. Corrective action is being taken and one responsible party has been identified and is cooperating, but the district has been providing replacement water at a cost exceeding $15,000 per week since the beginning of the year. According to the sponsors, the city of Colton is paying $4,000 per day to provide safe replacement water to its community.

3) Opponents to the measure dispute that this bill is clarifying existing law. While conceding that there are a few instances where regional board orders contain replacement water requirements, they feel these cases were rare and "reflect either an agreement between the parties or a decision by the discharger not to challenge the order." They contend that if this becomes common practice, it is more likely that the potentially responsible parties (PRPs) will challenge such orders in court. They also suggest that the courts, rather than the water boards, are better equipped to determine which parties are injured and what remedies are appropriate, especially where there are multiple PRPs. Finally they suggest that an "alternative dispute" resolution process would be better such as was suggested in a past legislative proposal.

4) Should the regional boards be included? The Association of California Water Agencies suggests that the regional water quality control boards should be explicitly given the same authority as well. As the section being amended by the bill does cite the clean up and abatement orders issued by both the SWRCB and the regional boards, the author and the Committee may wish to consider whether the bill should also include the regional boards in this explicit statement on page 2, line 15.

5) Technical amendment: This measure defines "potential drinking water supply" for purposes of this section, but due to amendments the term is no longer used in this bill. The author and the Committee may wish to delete the definition on page 5, lines 27-30.

REGISTERED SUPPORT / OPPOSITION:

Support

Environment California (Sponsor)
California League of Conservation Voters
Contra Costa Water District
Inland Empire Utilities Agency
Sierra Club California
Sierra Club, San Gorgonio Chapter

Opposition

American Chemistry Council
BioCom
California Chamber of Commerce
California Council for Environmental and Economic Balance
California League of Food Processors

California Independent Oil Marketers Association
California Independent Petroleum Association
California Manufacturers and Technology Association
California Plant Health Association
Chemical Industry Council of California
GenCorp
Lockheed Martin Corporations
San Diego Industrial Environmental Association
Western States Petroleum Association

Analysis Prepared by: Michael Endicott / E.S. & T.M. / (916) 319-3965

PETITION EXHIBIT 9

BILL ANALYSIS

Date of Hearing: September 9, 2003

ASSEMBLY COMMITTEE ON WATER, PARKS AND WILDLIFE
Joseph E. Canciamilla, Chair
SB 1004 (Soto) - As Amended: September 9, 2003

SENATE VOTE : 25-13

SUBJECT : Replacement of contaminated drinking water supplies.

SUMMARY : Authorizes the State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards (Regional Boards) to order persons who discharge waste into the waters of the state (responsible parties) to provide replacement water to water suppliers and private well owners whose supplies are contaminated and requires notice of perchlorate storage. Specifically, this bill :

Part 1 (formerly SB 922, as amended) :

1) Authorizes SWRCB or a Regional Board, as part of a cleanup and abatement order, to require a responsible party to provide or pay for replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner.

2) States that the above is declarative of existing law.

3) Requires a Regional Board or SWRCB, as part of a cleanup and abatement order that requires replacement water, to request a water replacement plan (WRP) from the responsible party if the replacement water is to be provided for more than 30 days.

4) Makes the WRP subject to the approval of the Regional Board or SWRCB.

5) Requires that replacement water meet all applicable federal, state, and local drinking water standards, and be comparable in quality to the water that was pumped by the public water system or private well owner prior to the discharge of waste.

6) Provides that a public water supplier or private well owner receiving replacement water, or any responsible party that is ordered to provide replacement water, may request non-binding mediation of all replacement water claims.

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7) Requires public water suppliers receiving replacement water, or responsible parties ordered to provide replacement water to engage in at least one confidential settlement discussion before a mutually acceptable mediator, if one of the parties requests mediation.

8) Exempts a Regional Board or SWRCB from mandatory participation in mediation.

9) Requires the party requesting mediation to pay the costs of the mediation.

Part 2 (formerly SB 1004, as amended) :

10) Requires a person who discharges 10 pounds or more of perchlorate into any waters of the state to immediately notify the Office of Emergency Services (OES).

11) Requires a person who discharges perchlorate into any waters of the state to immediately notify the appropriate Regional Board, and requires the Regional Board to immediately notify SWRCB.

12) Requires an owner or operator of a storage facility that has stored over 500 pounds of perchlorate at any time since 1950 to submit to SWRCB all of the following:

   a) The volume of perchlorate stored each year;
   b) The method of storage;
   c) The location of storage; and,
   d) Copies of documents relating to any monitoring for potential leaks into the waters of the state.

13) Provides an owner or operator of a storage facility that has stored over 500 pounds of perchlorate at any time since 1950 is in compliance with the bill if the following conditions are met:

   a) The owner or operator has provided substantially similar information to a state, federal, or local agency under an order issued by a Regional Board under various sections of the Health and Safety Code; and,
   b) The owner or operator notifies SWRCB before January 1, 2005, and continues to notify SWRCB annually, of the agency

to which the information was provided, and SWRCB determines that the information required is substantially similar to the information required to be supplied under this bill.

14) Defines "perchlorate" as all perchlorate-containing compounds not currently found in unused military munitions.

15) Defines "perchlorate storage facility" as a facility that stores over 500 pounds of perchlorate, not including a military munitions storage facility within a military installation that meets the Department of Defense Explosive Safety Board.

16) Exempts the following from the provisions of this bill:

a) A facility that stores perchlorate for retail purposes or law enforcement purposes; and,
b) Drinking water storage reservoirs.

17) Exempts water agencies conveying water in compliance with all state maximum contaminant levels from the reporting provisions in the bill.

18) Makes any person who fails to provide the required notification civilly liable.

19) Provides an administratively imposed civil penalty of up to $1,000 per day for failure to provide the required notification.

20) Provides a judicially imposed civil penalty of between $500 and $5,000 per day for failure to provide the required notification.

21) Requires SWRCB to publish a list of past and present perchlorate storage facilities within the state by January 1, 2006.

22) Authorizes SWRCB to charge an annual fee of no more than $100 to each perchlorate storage facility for each year information is provided.

23) Requires SWRCB to compile and maintain all information obtained under this bill, and make it available for public view.

24) Requires SWRCB to submit the information obtained under this bill to the Secretary for Environmental Protection when the Secretary notifies SWRCB that he or she has established a database that is able to receive the information.

EXISTING LAW

1) Requires the issuing of discharge permits, in accordance with the federal Clean Water Act and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), for all point discharges of pollutants to surface waters. All other discharges that could impact water quality or beneficial uses require waste discharge permits unless waived by the regional board.

2) Requires the State Office of Environmental Health Hazard Assessment to adopt a public health goal for contaminants found in drinking water in order to guide the development of primary drinking water standards by the state Department of Health Services.

3) Requires any business handling specified hazardous materials greater than 500 pounds per year to establish and implement a business plan for emergency response to a release or threatened release of hazardous materials in accordance with prescribed standards in accordance with the Hazardous Materials Release Response Plans and Inventory Act.

4) Requires each Regional Board to publish and distribute information every three months to all public water system operators regarding discharges of methyl t-butyl ether (MTBE) within the region.

5) Requires SWRCB to integrate existing monitoring programs with a comprehensive groundwater-monitoring program.

6) Requires a person who discharges any hazardous substance or sewage into the waters of the state to also inform OES. Failure to notify OES of the discharge is subject to a maximum of a $20,000 fine and imprisonment of one year.

FISCAL EFFECT : According to the Assembly Appropriations Committee analysis:

Minor costs, about $35,000 annually starting in fiscal year 2004-05, to SWRCB to process the perchlorate storage information and to prepare a list of past and present storage facilities in California; these costs are potentially covered by revenue generated from a $100 annual submission fee imposed on storage facility owners who provide the required information to SWRCB. (State Water Quality Control Fund.) The new provisions that were rooted in SB 922 were not identified as having significant costs to the water boards according to the Senate Appropriations Committee. However there might be some costs associated with the WRP review.

COMMENTS : This bill has two parts. The first part was originally the contents of SB 922 (Soto). The second part is the original contents of SB 1004 (Soto), with some amendments to remove the remaining known opposition. Both bills were heard in Environmental Safety and Toxic Materials Committee, and SB 922 was referred to Water, Parks and Wildlife Committee.

The first part of the bill establishes the authority of the water quality boards to issue water replacement orders as part of cleanup and abatement orders. The second part requires owners of perchlorate storage facilities to notify SWRCB of the volume of perchlorate stored, the location of the storage facility, and the history of releases of perchlorate to the environment.

California faces some major water contamination problems. Perchlorate, a component of rocket fuel, has been found in underground water supplies, as well as MTBE, a gasoline additive. According to proponents of this bill, 70 billion gallons of potential drinking water go unused each year due to contamination. This is enough to supply 400,000 families for a year.

When a responsible party contaminates a water supply, either above or below ground, one of the consequences may be the need for users of that water supply to seek alternative supplies. Under the Porter-Cologne Act, SWRCB and the nine Regional Boards are authorized to issue cleanup and abatement orders to persons or corporations that have discharged contaminants into water supplies, either above or below ground.

On occasion, the water boards have included in their cleanup and abatement orders a requirement that the responsible party

provide replacement water. The water boards seldom do this, however. In 2002, for example, SWRCB issued twenty drinking water cleanup orders, but not one required the provision of replacement water.

In the past, some responsible parties have challenged the water boards' authority to require replacement water. This bill authorizes SWRCB, as part of a cleanup and abatement order, to require the responsible party to either provide or pay for a replacement supply, removing the possibility of a challenge to the water boards' authority.

Under existing law, the water boards' orders may be appealed to the courts. This bill removes from challenge the issue of water boards' authority to require replacement water, but still allows appeals of the amount and the apportionment of costs charged to responsible parties. It also provides an alternative dispute resolution process to facilitate agreement on disputed claims.

Requiring responsible parties to pay for replacement water ensures that consumers receive a healthful supply, while taking the financial burden off of local water agencies or private well owners. Arranging and paying for a replacement water supply can be expensive for public water systems, and smaller systems may be financially overwhelmed. The City of Colton, for instance, was forced to pay $4,000 per day to provide water to its residents after the city found that most of its wells were contaminated with perchlorate.

The sponsors and supporters of SB 922 have met with industry representatives who opposed earlier versions of the bill. The two sides have considered each other's concerns and the latest amendments incorporate many of the industry representatives' suggestions. The industry representatives now support the current version of the bill.

The main concerns of the industry representatives were that:

1) SWRCB or the Regional Boards should request a WRP, to allow the responsible parties to find the most economical and least cost source and method of providing replacement water.

2) The bill should provide an alternative dispute resolution procedure to resolve issues regarding the quality and cost of replacement water, and the apportionment of responsibility for

providing replacement water among responsible parties.

Committee staff suggests that the following technical amendments be made to the bill:

1) The term "public water system" in Section 13304(f) should be changed to "public water supplier" to make it consistent with the term used throughout the rest of the bill.

2) The mediation provisions of Section 13304(g) should require that a person requesting mediation notify all parties of a request for mediation, including private well owners.

The bill also requires that persons storing over 500 pounds of perchlorate notify SWRCB of where and how the perchlorate is stored, and whether perchlorate has been released to the environment. Despite the seriousness of the perchlorate contamination of water supplies, there is still no comprehensive monitoring program in this state for perchlorate storage facilities. Supporters of this bill believe that the data provided by this bill will help to identify and quantify the current and possible future sources of perchlorate contamination, which may help to minimize future releases.

The author has taken amendments to alleviate concerns of opponents to earlier versions of SB 1004. The amendments include setting a minimum quantity of ten pounds before a discharge of perchlorate need be reported to OES. The bill allows the use of data on storage facilities that has been submitted to other agencies to comply with the notification requirements of the bill. Amendments to the bill also exempt unused (presumably usable) military munitions from the notification requirements for security purposes. Storage facilities for expended munitions are still required to notify SWRCB under this bill.

REGISTERED SUPPORT / OPPOSITION :

Support

Environment California (Sponsor)
GenCorp
Lockheed Martin

Opposition

None on file.

Analysis Prepared by : Jeffrey Volberg / W., P. & W. / (916) 319-2096

PETITION EXHIBIT 10

morgan hill

California Regional Water Quality Control Board

Central Coast Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov/rwqcb3
895 Aerovista Place, Suite 101, San Luis Obispo, California 93401
Phone (805) 549-3147 • FAX (805) 543-0397

Gray Davis
Governor

May 13, 2003

Mr. Richard W. McClure
Olin Corporation
Environmental Remediation Group
PO Box 248
Charleston, TN 37310-0248

Dear Mr. McClure:

SLIC: 425 TENNANT AVENUE, MORGAN HILL; PERCHLORATE REMOVAL SYSTEM FOR THE CITY OF MORGAN HILL'S TENANT AVENUE WELL

The City of Morgan Hill's Tennant Avenue well, located approximately 250 feet southwest of Olin's property, has been polluted with perchlorate originating from the Olin site. The well has been shut down since March of 2002 when perchlorate was detected at 15.8 µg/l. The Tennant Avenue well formerly produced an average of 450 gallons per minute and its shutdown strains the City's water supply during the high water-use summer season. Without this well, the City projects severe water shortages this summer, especially with the shutdown of three other wells due to sporadic detections of perchlorate.

The Regional board may require Olin to abate the effects of its discharge of waste. Consequently the Board may require Olin to provide the City with an alternative water supply or take other action to abate, among other things, the City's inability to use the Tennant Avenue well. The City has suggested that Olin fund wellhead treatment at the Tennant Avenue well. Benefits of this alternative include:

1. A treatment unit can be purchased and installed quickly and be operational by July 1, 2003, in time to help meet summer water use.
2. The extraction and treatment of perchlorate contaminated water at the Tennant Avenue well will reduce the mass of perchlorate leaving the area and will provide partial hydraulic containment of the plume within the well's radius of influence.

We suggest Olin work cooperatively with the Santa Clara Valley Water District and the City of Morgan Hill to coordinate purchase, installation, operation, and maintenance of a wellhead treatment system. However, Olin may propose an alternative that will otherwise allow the City to use the Tennant Avenue well or provide an alternative water supply.

Pursuant to Section 13267 of the California Water Code, you are directed to submit to the Regional Board, by **May 23, 2003**, a plan to fund wellhead treatment so the City can use the Tennant Avenue well during summer 2003 or an alternative plan to allow the City to use the well this summer or provide water supply to replace the City of Morgan Hill's Tennant Avenue well. The plan must propose an alternative that can be implemented by July 1, 2003.

EXHIBIT 10

Failure to comply with this request may subject you to civil liability pursuant to Section 13268 of the California Water Code. The reason the Regional Board needs this plan is to ensure timely replacement of the City's water supply polluted with perchlorate. The evidence that supports requiring Olin Corporation to provide the report includes soil and groundwater data collected at and near the site. More detailed information is available in the Regional Board's public file on this matter.

Any person affected by this action of the Regional Board may petition the State Water Resources Control Board to review the action in accordance with Section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The petition must be received by the State Board within 30 days of the date of this order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

If you have any questions, please contact A. John Mijares at (805) 549-3696 or Harvey Packard at (805) 542-4639.

Sincerely,

Roger W. Briggs
Executive Officer

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cc:

Mr. Jim Ashcraft
City of Morgan Hill
17555 Peak Avenue
Morgan Hill, CA 95037

Mr. Peter Forest
San Martin County Water District
PO Box 1501
Morgan Hill, CA 95038

Mr. Steven L. Hoch
Hatch & Parent
11911 San Vicente Boulevard, Suite 350
Los Angeles, CA 90049

Mr. Eric Lacy
CA Dept. of Health Services
2151 Berkeley Way
Berkeley, CA 94704-1011

Ms. Helene Leichter
City of Morgan Hill
17555 Peak Avenue
Morgan Hill, CA 95037

Mr. Eugene Leung
CA Dept. of Health Services
2151 Berkeley Way
Berkeley, CA 94704-1011

Mr. Bobby Lu
MACTEC Engineering and Consulting
200 Citadel Drive
Los Angeles, CA 90040-1554

Mr. Tom Mohr
Santa Clara Valley
Water District
5750 Almaden Expressway
San Jose, CA 95118-3686

Ms. Suzanne Muzzio
Santa Clara Co. Environmental Health Services
1555 Berger Drive, Suite 300
San Jose, CA 95112-2716

Mr. Bill O'Braitis
MACTEC Engineering and Consulting
200 Citadel Drive
Los Angeles, CA 90040-1554

Mr. Keith M. Casto
Sedgwick, Detert, Moran & Arnold
One Embarcadero, 16th Floor
San Francisco, CA 94111-3628

Ms. Jennifer Soloway
State Water Resources Control Board
Office of the Chief Counsel
P. O. Box 100
Sacramento, CA 95812-0100

Mr. Joe Root, General Manager
Corde Valle
One Corde Valle Club Drive
San Martin, CA 95046

Mr. Rob Stern
7510 Kenbrook Place
Suwanee, GA 30024